



PORTLAND HARBOR RI/FS

# LOWER WILLAMETTE RIVER SIDESCAN SONAR DATA REPORT

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**Recommended for Inclusion in Administrative Record**

May 15, 2009

**Prepared for**  
U.S. Environmental Protection Agency

**Prepared by**  
Anchor QEA, LLC

**AE08-14**

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

AOPC	area of potential concern
FS Feasibility	Study
FSP	Field Sampling Plan
GRS	Global Remote Sensing, LLC
GRS Survey Report	<i>Sidescan Survey of the Lower Willamette River, Portland, Oregon</i>
kHz	kilohertz
NMH	no measurable height
PDOP	position dilution of precision
RI Rem	Remedial Investigation
RM	river mile
Site	Portland Harbor Superfund Site

## 1.0 INTRODUCTION

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This Sidescan Sonar Data Report presents the results of the supplemental sidescan sonar survey activities for the Remedial Investigation/Feasibility Study (RI/FS) of the Portland Harbor Superfund Site (Site; Figure 1-1). The need for such a survey was identified in the *Comprehensive Round 2 Site Characterization Summary and Data Gaps Analysis Report* (Integral et al. 2007). Because the presence of any unknown debris or structures can substantially impact removal and/or capping in such areas, the collection of this information is important to determining the effectiveness, feasibility, and costs of remedial alternatives evaluated during the FS. *The Round 3B Side-Scan Sonar Field Sampling Plan* (FSP; Anchor 2008) documents the approach and the procedures used to implement the sidescan sonar survey to identify areas of debris and unknown submerged structures within the river.

The survey was conducted by Global Remote Sensing, LLC (GRS) from May 30 through June 4, 2008, during the spring freshet on the Columbia River. The survey included the navigation channel, as well as the slope from the river channel bottom to the water line along both shores on the day of the survey. Data collected are intended to augment information obtained in previous investigations.

### 1.1 BACKGROUND

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Three rounds of data collection have taken place for the project since 2001. In February 2007, the *Comprehensive Round 2 Site Characterization Summary and Data Gaps Analysis Report* (Integral et al. 2007) was completed, describing findings from the first two rounds of data collection and identifying data gaps. The report identified the lack of sidescan sonar imagery as a data gap and stated that once final areas of potential concern (AOPCs) have been identified, it will be necessary to conduct a sidescan sonar survey of each of these AOPCs to determine the presence, nature, and extent of any debris in the sediment surface (e.g., submerged logs and structures) of these areas. It may be some time before final AOPCs are identified. Consequently, to keep the project on schedule, a sidescan sonar survey of the entire Site was initiated.

### 1.2 SURVEY OBJECTIVES

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The sidescan survey was conducted with the following objectives:

- To survey and map bottom features between river miles (RMs) 1 and 12.2 (Figure 1-1) in the Lower Willamette River, which includes approximately 2,000 feet at the mouth of the Multnomah Channel, to determine the approximate distribution of debris in the river channel and along both banks of the river to support decision making processes related to the FS.

- To conduct additional processing of sidescan sonar data collected in this survey to allow for the generation of mosaic imagery of sediment surface textures (i.e., sands, fines, etc.) throughout the survey area.

A description of the survey procedures followed and the equipment used by GRS for data acquisition are documented in the *Sidescan Sonar Survey of the Lower Willamette River, Portland, Oregon* (GRS Survey Report) attached to this report as Appendix A. A DVD accompanying this report includes the maps associated with Appendix A and additional data products as discussed in Section 3.0.

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## **2.0 DEVIATIONS**

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The FSP describes the use of a Benthos C3-D high resolution sidescan sonar device or comparable equipment for data acquisition. A Benthos SIS 1500 high-resolution chirp sidescan sonar system was used for this survey. The SIS 1500 is a swept frequency or ‘chirp’ sonar operating at a center frequency of 200 kilohertz (kHz) and features 0.5 beam-width transducers. GRS configured the equipment for a 100-meter range (200-meter swath) and towed at approximately 3.5 knots. Both the SIS 1500 and the C3-D sonar equipment are capable of collecting the same sonar image, with the difference that the C3-D unit is capable of collecting simultaneous bathymetric data that were not specified in the survey. A full description of survey system components is listed in Table 2-1 in the GRS Survey Report (Appendix A) and system component specifications are included as Appendix B of the GRS Survey Report.

Survey speeds of 3.5 knots or lower were planned as specified in the FSP. Survey speeds of 2.8 to 3.1 knots were typical when traveling upstream; however, speeds of 3.3 to 3.7 knots were reached in the downstream legs, and near the center of the channel, speeds of approximately 4 knots were recorded. A discussion of survey speeds as related to data acquisition is presented in Section 4.1.

### 3.0 DATA PRODUCTS

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A full interpretation and discussion of results of the sidescan sonar survey are provided in the GRS Survey Report attached to this report as Appendix A. Data products associated with the GRS Survey Report are provided in the accompanying DVD. Data products available on the DVD include a trackline map of the sonar lines traveled during data acquisition; full-resolution (1-foot pixel), geocorrected, digital mosaics of the sidescan sonar imagery; and a database of targets identified from the sidescan sonar records. In this report, as well as in the text of the GRS Survey Report, targets refer to individual objects identified during the sidescan sonar data processing, however, in Appendix A of the GRS Survey Report, the database refers to individual identified objects as "contacts." The term "target" in this report refers to individual objects identified in the sidescan sonar processing. Targets (contacts) are classified in the GRS Survey Report Appendix A database and identified as debris, pilings, dolphins, or other structure. The sonar trackline information is presented on the accompanying DVD as Maps 1-1 and 1-2 of the GRS Survey Report. Digital mosaics of the sonar imagery are provided on the DVD as Maps 2-1 through 2-36. Individual sonar targets are presented overlaying the sonar mosaic in the upper panel of Maps 2-1 through 2-36 of the GRS Survey Report. The same sonar targets are presented overlaying the 2003 David Evans and Associates multibeam bathymetric data for comparison in the lower panel of Maps 2-1 through 2-36. Vertical datum of bathymetry images in the bottom panel is NAVD88. The individual sonar targets shown in the upper panels and the 2003 David Evans multibeam survey imagery in the lower panels are presented overlaying an aerial image for locational reference only. Maps provided on the DVD are large maps and should be reproduced on a plotter onto large paper if a hard copy is needed.

A map of the sediment boundaries interpreted from the sonar imagery is presented on the accompanying DVD as Map 3 of the GRS Survey Report (Appendix A). The sonar target database with locations and a brief description of each target is presented in a table presented as Appendix A of the GRS Survey Report.

The sidescan sonar targets are also presented on the accompanying DVD as an interactive database integrated into a Google Earth imagery in a more detailed and interactive form with sonar images and target data layered with each target on the map. Sidescan sonar data examples of target images on the provided maps from the accompanying DVD are presented in Figures 3-1 through 3-7 in the GRS Survey Report (Appendix A).

The GRS target data are provided on the accompanying DVD. The DVD includes the individual maps in PDF format, and a JPG image of each target referenced with a sonar contact number provided in the table as Appendix A of the GRS Survey Report (e.g., Contact3194 listed in the table presented in Appendix A of the GRS Survey Report refers to target C-3194 displayed on the mosaic map). Each target is referenced into the Google Earth imagery and is interactive. Zooming in on the Google Earth imagery provides identification of each target as listed in Appendix A of the GRS Survey Report. Clicking on each target is interactive and provides access to data layers with the information in the Sonar Contacts

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Database in Appendix A of the GRS Survey Report, as well as a sonar image of the contact from the sonar database.

## 4.0 RESULTS

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The sidescan sonar survey area extended from RM 1, at approximately the small slough that enters the Willamette River immediately downstream from the Columbia Grain Terminal, to RM 12.2, at approximately 1,100 feet upstream of the Steel Bridge. The survey area included an approximately 2,500-foot-long segment of the Multnomah Channel and full coverage of the ship basins at the Schnitzer Terminal and Portland Shipyard. The survey did not include slips 1 and 3 of Terminal 4 at the Port of Portland.

The sidescan sonar survey was timed to occur during the spring freshet when the water level in the river is highest to maximize bank-to-bank sidescan sonar coverage. The survey was performed from May 30 through June 4, 2008, and corresponded to the freshet as illustrated in Figure 2-1 of the GRS Survey Report (Appendix A).

The first objective for the sidescan sonar survey is to determine the approximate distribution of debris in the river channel and along both banks of the river to support decision making processes related to the FS. An initial round of sonar data processing identified 1,369 targets. Concern that additional targets were not identified led to a second round of sonar data processing. Following the second round of sonar data processing, the sidescan sonar survey identified 7,445 discrete targets from the sonar record from the approximately 12.2 river miles of the Lower Willamette River surveyed. Maps 2-1 through 2-36 on the accompanying DVD present sonar target data, and a summary of the targets identified is presented in Table 4-1 in the GRS Survey Report (Appendix ). A detailed list of targets and their locations is presented in a table provided as Appendix A of the GRS Survey Report. Sonar features are used on the maps to visually highlight the occurrence of vessels, oil containment booms, dock faces, bridge pilings, and other structures where they might cause confusion on the sonar image, but they are not listed separately in the target database. Therefore, a piling, a pier, or a dolphin is a target; whereas, a vessel present during the survey is depicted as a feature.

Approximately two thirds of the targets identified were clearly man-made objects (piers, pilings, dolphins, and structures) emplaced in the river for navigational, operational, or engineering purposes. Approximately 25 percent of the remaining material was classified as either debris, debris-NMH (no measurable height), or unclassified (debris). Debris was commonly found along the margins of dock structures and approximately a boat width away from them, a pattern that is consistent with vessel activity patterns.

Logs accounted for approximately 5 percent of the targets, with their occurrence highly localized to areas that are or were log booming areas. Other geologic and cultural features included the occurrence of gravel, depressions, anchor drags, and dredge artifacts. The number of targets identified does not match the number of targets listed in the target list in Appendix A of the GRS Survey Report, as some targets identified in the target acquisition portion of the process were subsequently dismissed in the classification and identification portion of the targeting process.

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The second objective of the sidescan sonar survey was to produce a mosaic of the sidescan sonar imagery to map the occurrence of surface sediment types (i.e., sands, fines, etc.) as they occur throughout the survey area. The sonar images at 1-foot pixel resolution presented in the upper panels of Maps 2-1 through 2-36 on the accompanying DVD are used to create the interpreted sediment boundary data that are presented in Map 3 in the GRS Survey Report. The interpretations were based on sonar backscatter intensity and sediment morphology. Interpretation of data from the sidescan sonar data by the survey analyst suggests that the bulk of the river is medium-grained sand. Areas of increased sonar backscatter were interpreted as coarse-grained sand. Areas of reduced sonar backscatter were interpreted as fine-grained sand and silt. Sand waves are noted in the channel center in the upper reaches of the survey area and are most notable in areas that have not been extensively dredged. It is not the intent of this survey to compare sediment morphology on the sonar image to any previously collected sediment grain size data. The FS will compare data collected by the survey to substrate data from the RI to support the interpretation of bottom conditions as necessary for evaluating remediation alternatives.

#### **4.1 DATA QUALITY DISCUSSION**

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A considerable effort was made by the survey crew to acquire bank-to-bank sonar coverage. A vessel speed of less than 3.5 knots and a sonar trackline spacing of 75 meters and a maximum sonar range of 100 meters providing 160 percent coverage was planned during survey data acquisition to provide images at nadir and sufficient resolution in the outer ranges of the survey as specified in the FSP. The sonar coverage was gapless with the exception of a few areas that were inaccessible behind docks, piers, or moored vessels and were not cause for re-survey per the FSP.

At 100-meter range with a speed of 3.5 knots, there are approximately 4.1 pings/meter along track. The target speed-over-ground of 3.5 knots or slower was achieved when traveling upstream, when the vessel was operating as slow as 2.0 to 3.1 knots. On the downstream legs closest to shore, the vessel was able to maintain about 3.3 to 3.7 knots; however, towards the middle of the channel, the speed edged closer to 3.8 to 4 knots and occasionally topped 4.3 knots.

Survey line spacing was initially planned at 50-meter spacing; however, line spacing varied over the course of the survey. The quality control objective stated in the FSP was to provide 3 sonar pings per 0.5 meter target. To ensure this criteria was met, 200 to 300 percent coverage in the critical areas near shore and along docks was obtained, effectively doubling or tripling the ping strikes on individual targets. The perimeter data were acquired as near to shore as feasible with the vessel travel paralleling the broad trend of the riverbank. The survey lines adjacent to and inside of the perimeter lines were acquired at 20 to 30 meters line spacing. Adjacent lines were run between 50 to 60 meters. In the widest parts of the river, line spacing opened to about 70 meters along the center line. A survey coverage map internally generated by the SonarWiz data processing program is presented as Figure 2-4 in the GRS Survey Report (Appendix A).

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Calm waters and little prevailing wind were generally acceptable during the survey period. Weekend small pleasure craft activity resulted in occasional wakes, causing some acoustic noise in the water column but in general, problems from other vessel traffic were minor. Complications with the survey vessel motor caused several stalling events throughout the survey; however, at each occurrence, the trackline in progress was restarted at or before the point where the stall occurred. There were no data gaps as a result.

Navigation equipment used is described in Section 2.2.2 of the GRS Survey Report (Appendix A). During the survey, a PDOP (position dilution of precision) alarm was set at 2.5 and was continuously monitored to maintain the scope of work-specified maximum PDOP of 3. The alarm value was never exceeded, and a PDOP of 2 was typical during the survey.

Sonar system components are listed in Table 2-1 and discussed in Section 2.2 in the GRS Survey Report (Appendix A). A Ross Model 825 Single-Beam Echosounder and an Odem Digibar sound velocity meter were used in conjunction with the sidescan sonar equipment. Sound velocity measurements were made each morning during the survey period. Though sound velocity does not directly affect data acquisition, sound velocity is useful in the interpretation of sonar data. The Ross Single-Beam Echosounder was used to collect bathymetric data useful for real-time vessel operations and useful for sidescan sonar data processing and analysis. The collection of bathymetric data for hydrographic purposes was not the intention of the sidescan sonar survey.

The signal-to-noise ratio as described in the FSP was recorded into the HYPACK data acquisition equipment and monitored continuously by the survey technician in real time during the survey. At no time did the signal-to-noise ratio warrant re-survey as determined by the operator.

Confidence checks were provided by comparing images in overlapping mosaics during image data processing. The processing technician checked that overlapping mosaics indicated the same georeferenced data for individual targets.

## **5.0 DISCUSSION**

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Generally, the sidescan sonar survey met the objectives stated in the FSP, in that approximate areas of high concentrations of debris are identified throughout the project limits and the quality control requirements for data collection specified in the FSP were followed.

The sidescan sonar survey identified a total of 7,445 discrete targets in the approximately 12.2 miles of the Lower Willamette River surveyed. The vast majority of targets identified are pilings and dolphins associated with docks and pier faces. Other targets include logs, miscellaneous debris, and surficial features including depressions, gravel, and anchor drag scours. It is likely that additional features and targets are present in the river below layers of silt or sand that would not be identified by the sidescan sonar survey.

The target areas identified by the sidescan sonar survey interpretation are sufficient to identify areas of increased presence of debris. These areas will be useful to the FS process when used in conjunction with other data such as multi-beam bathymetry, grain size data, aerial photography, historic drawings, and the experience of field personnel with specific knowledge of each site. Various shoreline structures can be interpreted from the sonar images, including armored banks and natural shorelines. Examples of various shoreline structures are described in Figures 3-1 through 3-7 in the GRS Survey Report (Appendix A).

This report presents the results of the sidescan sonar survey including the location of targets including pilings, dolphins, submerged structures and debris. The interpretation, evaluation, and implications in regard to cleanup alternatives relating to the debris found will be discussed in the FS.

## **6.0 REFERENCES**

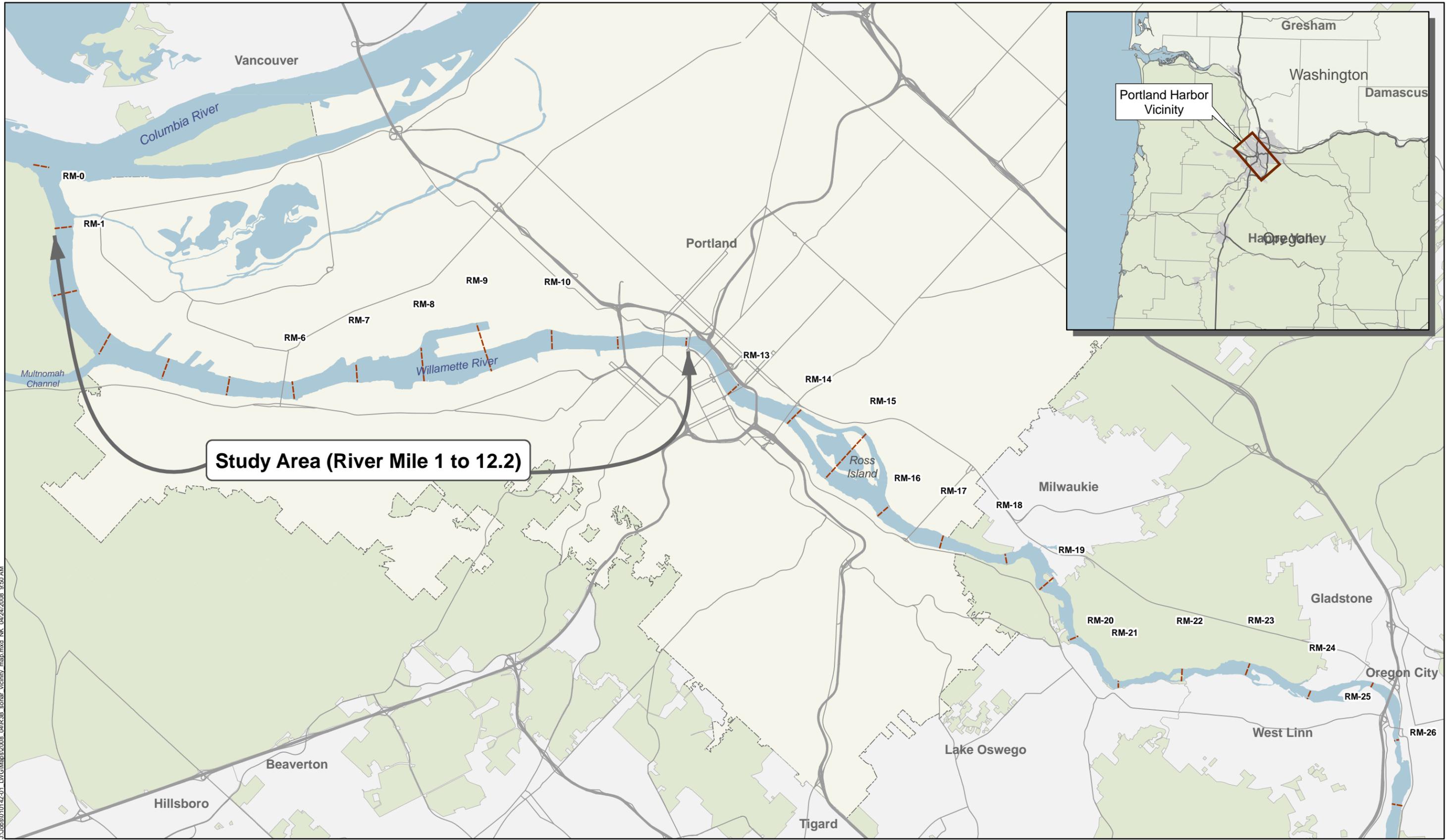
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Anchor Environmental, L.L.C. (Anchor). 2008. *The Round 3B Sidescan Sonar Field Sampling Plan*. Prepared for The Lower Willamette Group. AE08-01. April 2008.

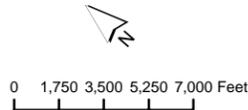
Integral, Windward, Kennedy/Jenks, and Anchor. 2007. Portland Harbor RI/FS: *Comprehensive Round 2 Site Characterization Summary and Data Gaps Analysis Report*, plus addenda. IC07-0004. Prepared for Lower Willamette Group. Integral Consulting, Inc., Mercer Island, WA; Windward Environmental LLC, Seattle, WA; Kennedy/Jenks Consultants, Portland, OR; Anchor Environmental, LLC, Portland, OR.

## **FIGURES**

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**Study Area (River Mile 1 to 12.2)**



- Map Features:**
- - - River miles
  - Freeways
  - Major Streets
- CTY\_FILL**
- <all other values>
  - Unincorporated area

**FEATURE SOURCES:**  
 Transportation, Property, or Boundaries: Metro RLIS  
 Streams, Water Bodies: Metro RLIS.  
 Channel & River miles: US Army Corps of Engineers.  
 Bathymetric Information: David Evans and Associates, Inc.

**Figure 1-1**  
 Portland Harbor RI/FS  
 Round 3B Sampling - Side Scan Survey FSP  
 Site and Vicinity Map

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**APPENDIX A**

**SIDESCAN SONAR SURVEY OF THE LOWER  
WILLAMETTE RIVER, PORTLAND, OREGON**

**Global Remote Sensing, LLC**



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Report Title           **Sidescan Sonar Survey of the Lower Willamette River,  
Portland, OR.**

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## 1. INTRODUCTION

Global Remote Sensing, LLC (GRS) under contract to Anchor Environmental, LLC (Anchor) and in support of the Lower Willamette Group (LWG), has completed a comprehensive sidescan sonar survey of the Lower Willamette River between river mile (RM) 1.0 and RM 12.2. The survey was conducted aboard GRS's research vessel using GRS's Benthos SIS 1500 high-resolution chirp sidescan sonar system. The survey, timed to correspond with the spring freshet, commenced on May 30<sup>th</sup> and continued through June 4<sup>th</sup>, 2008.

### 1.1. BACKGROUND

The US Environmental Protection Agency (EPA) has identified Portland Harbor as an EPA Superfund Site; and since receiving this designation, the EPA has undertaken two rounds of environmental data collection. These prior efforts led to a February, 2007 comprehensive report that summarized the status of the data collection effort to date with a focus on identifying gaps in the existing data set. The report identified sidescan sonar imagery as a significant data gap. The specific survey objectives and the scope of work were developed by GRS, Anchor and the LWG to meet the objectives set forth in *Portland Harbor RI/FS Round 3B Sidescan Sonar Field Sampling Plan*.

This report summarizes the methods and equipment used to implement the sidescan sonar survey of the Lower Willamette River and presents the survey results.

### 1.2. SURVEY OBJECTIVES

The sidescan sonar survey objectives were twofold. The first objective was to map bottom features as they occur on the riverbed of the Lower Willamette River between RM 1 and RM 12.2. The second objective was to produce mosaic imagery of the sidescan sonar data of the sediment surface textures (i.e., sands, fines, etc.) throughout the survey area.

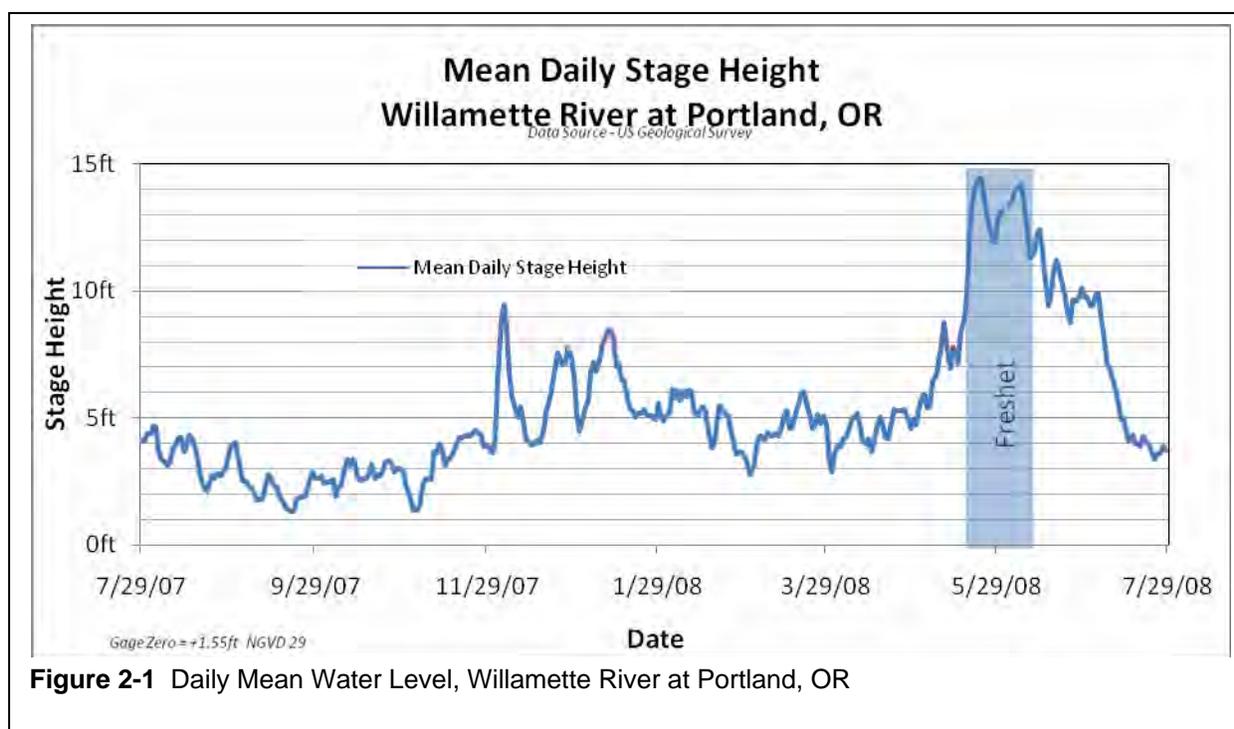
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## 2. SURVEY AND EQUIPMENT

A high-resolution sidescan sonar survey was conducted to provide comprehensive coverage of river bed conditions occurring in the Lower Willamette River. Single-beam echosounder data were collected to augment the sidescan data. In order to maximize sidescan sonar coverage, the survey was planned for the high-water of the spring freshet (Figure 2-1).



### 2.1. SURVEY

Throughout the survey, weather and sea state were generally acceptable, with calm waters and little to no wind prevailing for most of the survey. The survey spanned a weekend where the small pleasure-craft activity peaked resulting in occasional wakes and some acoustic noise in the water column. In general, problems stemming from other vessel traffic were minor.

### 2.2. INSTRUMENTATION

A Benthos 1500 high-resolution sidescan sonar system and a Ross 825 single-beam echosounder were mobilized aboard the *R/V Almar*. Data from both systems were collected

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simultaneously. Table 2-1 presents a list of the systems deployed with detailed specification sheets presented in Appendix B.

<b>Table 2-1 Survey System Components</b>	
<b>Measurement</b>	<b>System/Model</b>
Sidescan Sonar	Benthos SIS 1500 Chirp
Sidescan Sonar Data Acquisition	Triton ISIS
Sidescan Sonar Data Processing	Chesapeake Technologies SonarWiz
Navigation & INS	Trimble DSM232 DGPS / Applanix POS/MV
Single-Beam Echosounder	Ross Model 825
Single-Beam Echosounder Data Acquisition	Hypack
Sound Velocity	Odem Digibar
Water Level	Recorded Stage Height, USGS at Portland, OR

### **2.2.1. Sidescan Sonar – Benthos SIS 1500 Sidescan Sonar, ISIS & SonarWiz**

A Benthos SIS 1500 high-resolution sidescan sonar system was used to collect riverbed sonar imagery. The SIS 1500 is a swept frequency or ‘chirp’ sonar operating at a center frequency 200 kHz and featuring a 0.5 beam-width transducers. The system was configured for a 100 meter range (200 meter swath) and towed at a target speed of 3.5 knots. The data were logged to the industry-standard .XTF format to a computer running ISIS sonar data processor. Sidescan sonar data post-processing was conducted using a combination of ISIS and SonarWiz.

### **2.2.2. Navigation – Trimble DMS-232, Applanix POS/MV & Hypack**

Primary position data were acquired with a Trimble DMS-232 DGPS system with the receiver configured to automatically acquire US Coast Guard differential corrections. The raw DGPS position data were sent to the Applanix POS/MV inertial navigation system (INS) which provided positional continuity in the event of temporary DGPS signal loss or degradation. The scope of work specified a maximum PDOP value (position dilution of precision) of 3. A PDOP alarm value of 2.5 was entered into the POS/MV, the alarm was continuously monitored and the alarm value was never exceeded; in general, a PDOP of around 2 was typical. Position data were sent from the POS/MV at a 10 Hz update rate to both Hypack and to SonarWiz. The sonar was deployed off of the vessel’s bow and towed about 4 feet deep. This arrangement placed the sonar’s transducers approximately 6 feet ahead of the vessel’s INS reference point. The ‘layback’ value of -6 feet was entered in SonarWiz during sonar data post-processing to account for this offset. The 4 foot deployment depth was found to be a good compromise in that it gave good riverbank coverage and still permitted the sonar to image under shallow draft vessels.

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### 2.2.3. Bathymetry – Ross 825 Single-beam Echosounder

A Ross Model 825 single-beam echosounder with a 2° beam-width transducer was mobilized for the survey. The single-beam echosounder data were acquired to Hypack. The survey emphasis was sidescan sonar data; the bathymetric data produced were too sparse for hydrographic purposes but the data were useful for real-time vessel operations and for sidescan sonar data processing and analysis. A client provided multibeam bathymetric surface significantly aided in data analysis and interpretation.

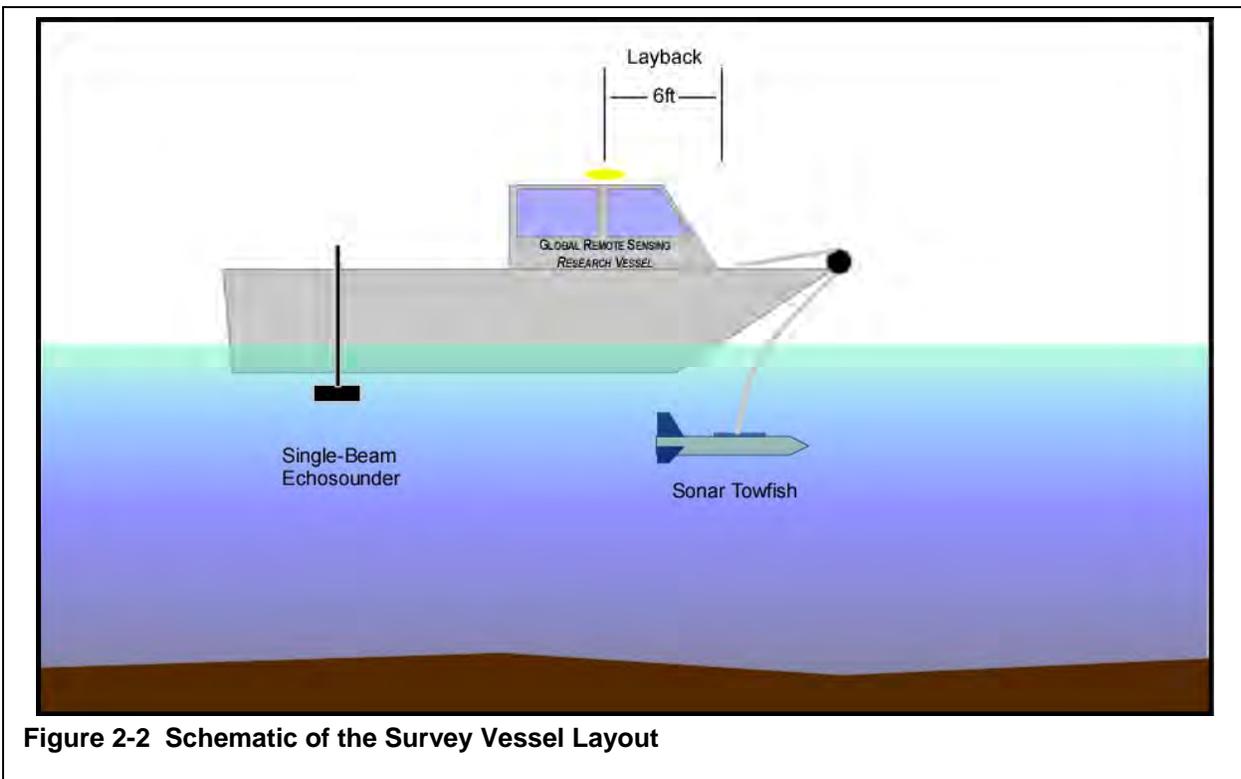


Figure 2-2 Schematic of the Survey Vessel Layout

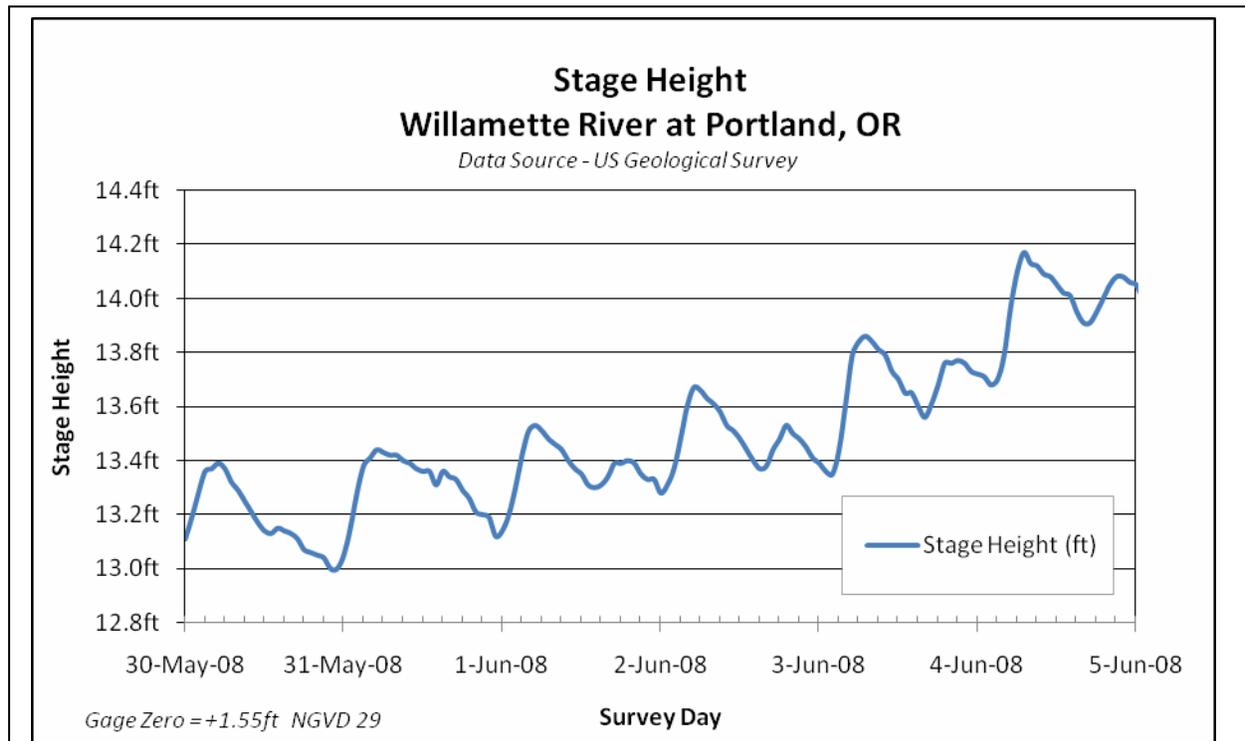
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#### 2.2.4. Water Level – USGS River Gauge

Water level data for the Lower Willamette were acquired post-survey from the USGS River Gauge 14211720 at Portland, OR. The gauge is located at RM 12.8 on the upstream side of the Morrison Drawbridge. The data are collected at 15 minute intervals. The data are referenced to NAVD29.



**Figure 2-3** Water Level, Willamette River at Portland, OR during Sidescan Sonar Survey

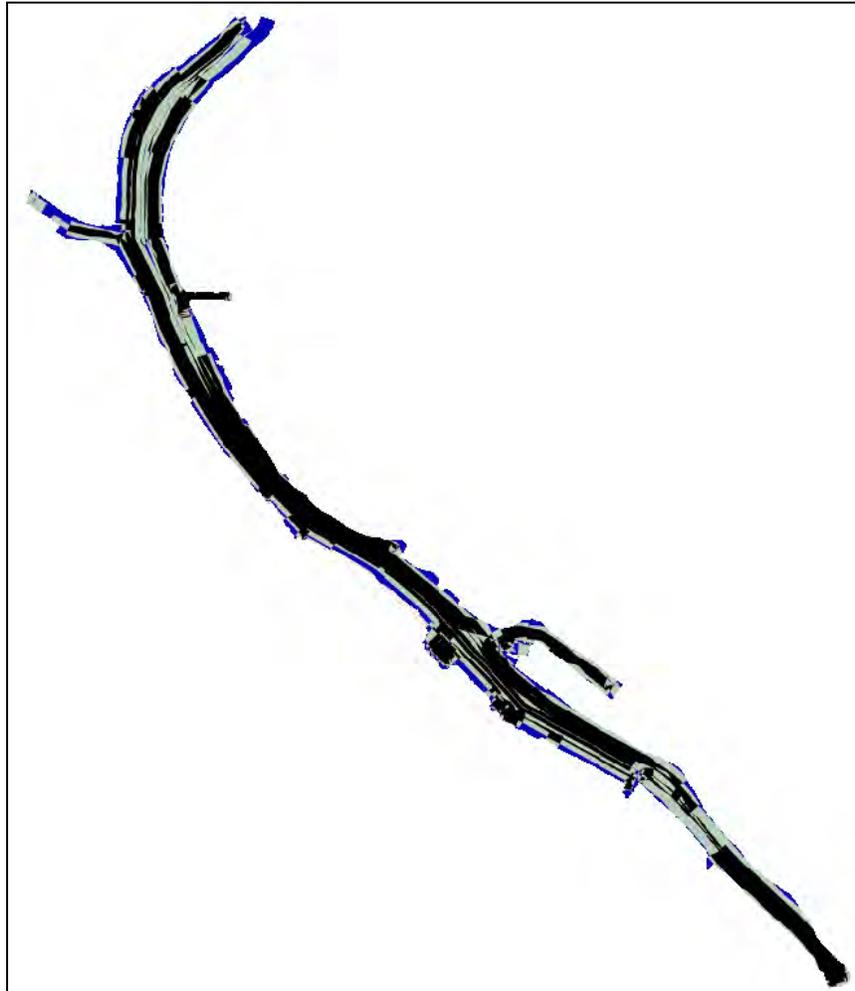
#### 2.2.5. Survey Coverage

The survey was conducted to optimize efficiency. The minimum speed for safe vessel operation and to maintain heading control is approximately 2.5 knots. This speed is often not feasible while running with the current. The survey speed varied from less than 2 knots to slightly faster than 4 knots. The maximum sonar range setting was 100 meters and the maximum line spacing was 75 meters providing a minimum of 125% overlap.

A survey coverage map internally generated by SonarWiz is presented as Figure 2-4.

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**Figure 2-4 Sonar Coverage Map**

The blue regions represent areas of 100% sonar coverage, the green region are areas of 200% coverage, and the black regions are areas of 300% coverage or better.

Operating during the high-flow conditions of the freshet provided a challenge as a vessel's steerage is related its to speed through the water and in order to maintain adequate steerage, a vessel traveling with the current necessitates a faster speed-over-ground (SOG) than when working into the current. When traveling upstream and in the quiescent portions of the survey area the vessel was typically able to operate at 2.8 knots to 3.1 knots and often as slow as 2.0 knots. On the downstream legs, while operating closest to shore, the vessel was able to maintain about 3.3 knots to 3.7 knots. In the center of the channel, near the thalweg, the vessel's speed nudged closer to 3.8 knots to 4.0 knots and occasionally topped 4.3 knots when operating with the current.

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Revised 23 February 2009  
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Line spacing varied somewhat over the course of the survey. The stated quality control objective was to provide 3 pings per 0.5 meter target. To assure that this criteria was met, 200% to 300% coverage in the critical areas near shore and along docks was obtained effectively doubling or tripling the ping strikes on individual targets. Initially a 50-meter line spacing was planned, however, this plan was modified on site after collecting the perimeter data. The perimeter data were acquired as near to shore as feasible with the vessel travel paralleling the broad trend of the riverbank. In order to maximize coverage along the pier faces and riverbanks, the lines adjacent to and inside of the perimeter lines were then acquired at 20 meters to 30 meters line spacing. These lines were acquired with a minimum of vessel course changes. The adjacent lines inside of this second series were collected at 50 meter line spacing. In the widest part of the river, line spacing opened to about 70 meter along the center survey lines.

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### 3. INTERPRETATION AND DISCUSSION OF RESULTS

The Lower Willamette River is, at present and has been for a considerable length of time, heavily industrialized giving many opportunities for significant cultural impacts to the waterway. This study identified 7244 sonar targets along the 11.2-mile long study area. The survey area extends from RM 1, at approximately the small slough that enters the Willamette immediately downstream from the Columbia Grain Terminal, to RM 12.2, at approximately 1100 feet upstream of the Steel Bridge. The survey area includes an approximately 2500 foot long segment of the Multnomah Channel and full coverage of the ship basins at the Snitzer Terminal and Portland Shipyard. Within the survey area, the Willamette River varies in width from approximately 800 feet near the Steel Bridge in downtown Portland to in excess of 2300 feet near the mouth of Multnomah Channel. Sonar data were collected parallel to the riverbank with lines spaced as to provide full overlapping nadir coverage. A considerable effort was made to acquire bank-to-bank sonar coverage and, with the exception of a few areas that are located behind docks or piers, the coverage is gapless.

#### 3.1. OVERVIEW OF DATA PRODUCTS

A variety of data products have been generated to support the findings of this investigation. These include a trackline map of the sonar lines, a full-resolution, geocorrected, digital mosaic of the sonar imagery and a database of targets and features identified from sonar records. These data are presented as series of maps and tables. The sonar trackline information is presented in Map 1-1 and Map 1-2. The sonar target locations and features are presented overlaying the sonar mosaic in the upper panel of Maps 2-1 through 2-36. The target data are also presented against a bathymetric surface, provided by the client, in the lower panels of Maps 2-1 through 2-36. A map of the sediment boundaries interpreted from the sonar imagery and bathymetry is presented as Map 3. A sonar target database with locations and a brief description of the targets is presented as a table in Appendix A, and as an interactive Google Earth database, on an accompanying digital medium. Finally, all data products are provided digitally as either geoTIFF's, ArcGIS shapefiles or .pdf.

#### 3.2. SONAR TARGET AND FEATURE IDENTIFICATION

Sonar targets and features were located and identified during sidescan sonar post-processing. Detailed target selection is both an interactive and an iterative process that requires multiple passes through the sonar records in order to accurately identify all targets and to remove duplicative target entries caused by locating the same target on adjacent overlapping sonar

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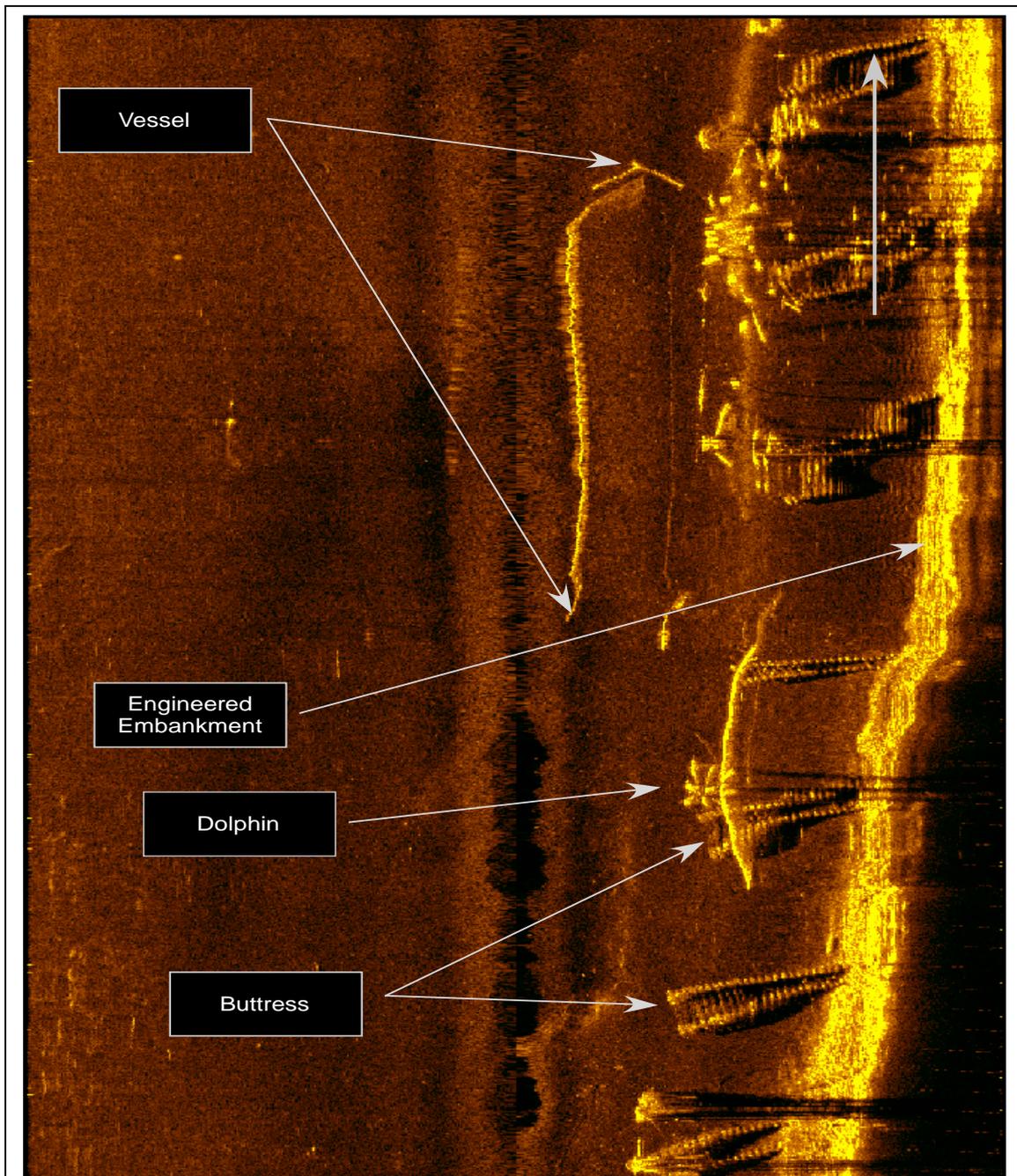
lines. While sidescan sonar target location is straightforward and very much aided by the mensuration and measurement capabilities of the sonar processing software, sidescan target identification is much more subjective. In general it is only possible to identify small targets into broad categories. Each contact is designated by a unique identifier which appears on the map and in the database of contacts (Appendix A).

### **3.3. SIDESCAN SONAR TARGET CLASSIFICATION**

The sidescan sonar survey identified and evaluated 7445 discrete targets, 201 of which were dismissed. A breakdown of target types, a brief general description and the number of occurrences of each type is provided in Table 4-1. Sidescan sonar data examples are presented in Figures 3-1 through 3-7. The target locations, presented as points and the features, presented as the polygonal outlines, are reported on Maps 2-1 through 2-36. A list of sidescan sonar targets, their locations and a brief description are presented as Appendix A. Finally, the sidescan targets are presented as an interactive Google Earth based-database accompanying this volume.

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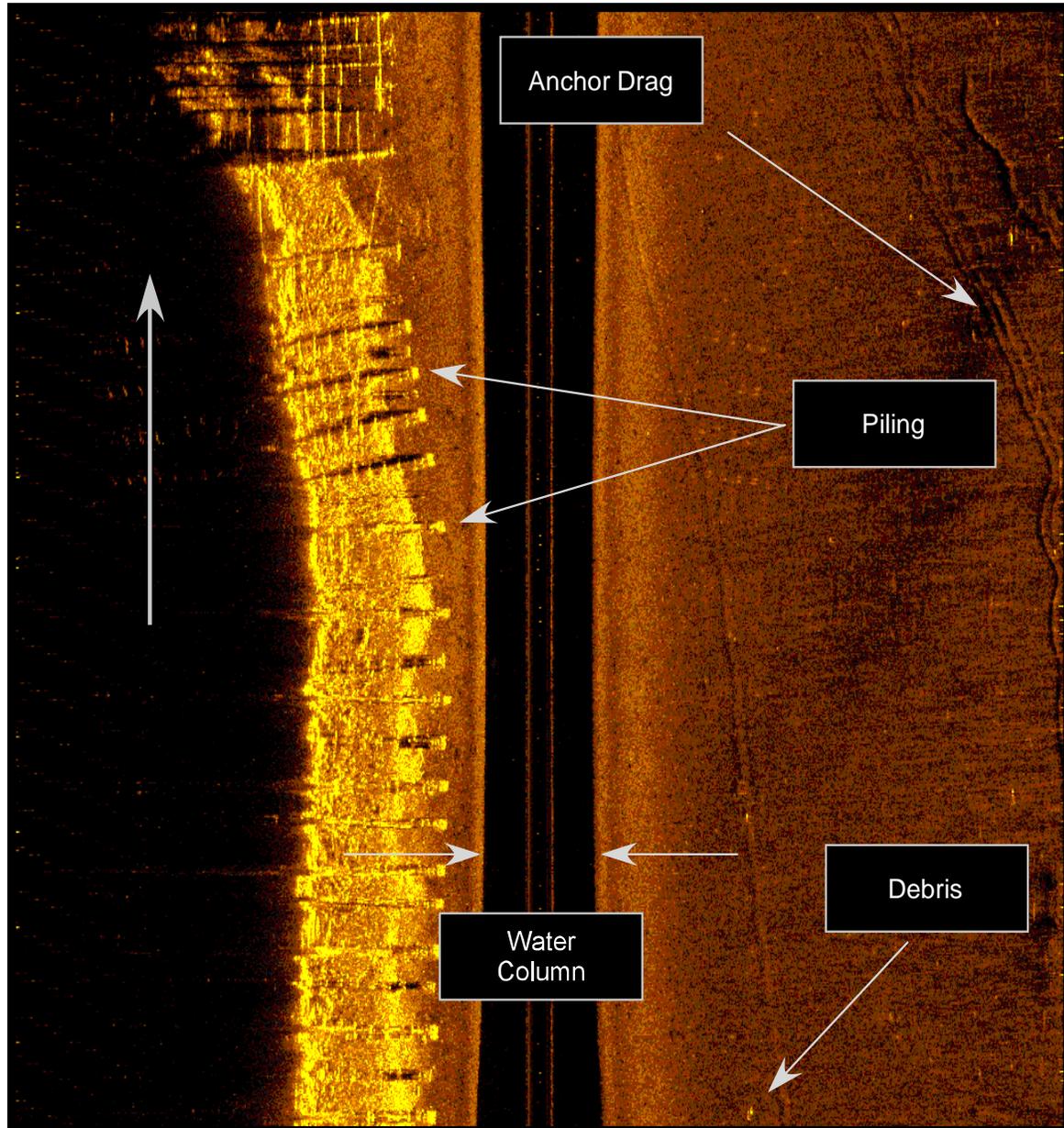


**Figure 3-1.** Sidescan Sonar Data Example.

The sonar image is oriented with sidescan sonar travel direction in the up direction on the page. Data are slant-range corrected. The bright yellow areas are acoustically hard reflectors, brown is less reflective and shadows are black. The bright yellow area on the right margin of the image is the riverbank which slopes toward the sonar making it a highly effective reflector of acoustic energy.

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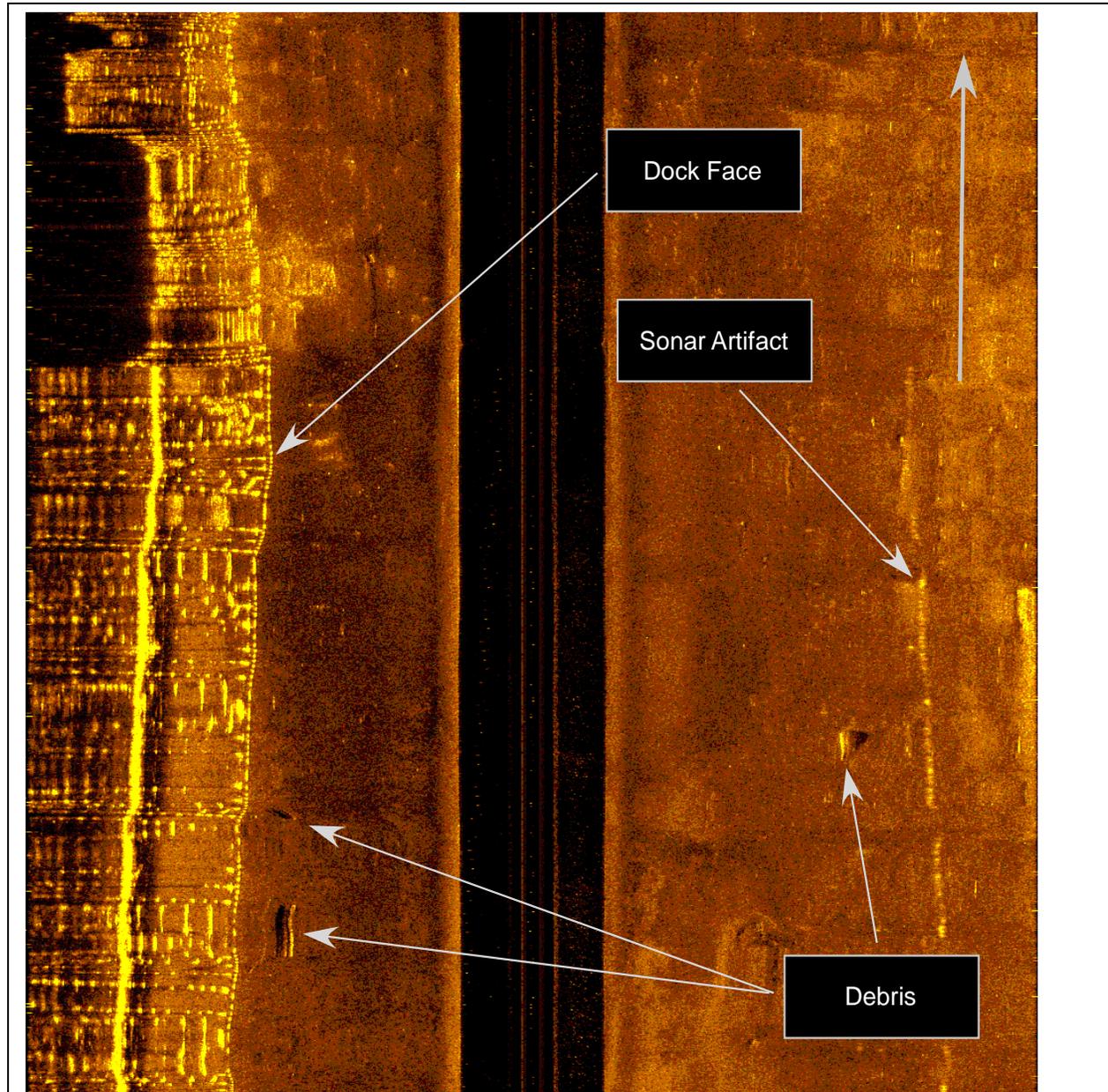


**Figure 3-2** Sidescan Sonar Data Example.

The sonar image is oriented with sidescan sonar travel direction in the up direction on the page. The data are uncorrected for the sonar slant-range. The water column is the black strip at the center image. Note the long shadows cast by the pilings. Cross beams between pilings are noted in the top of the image.

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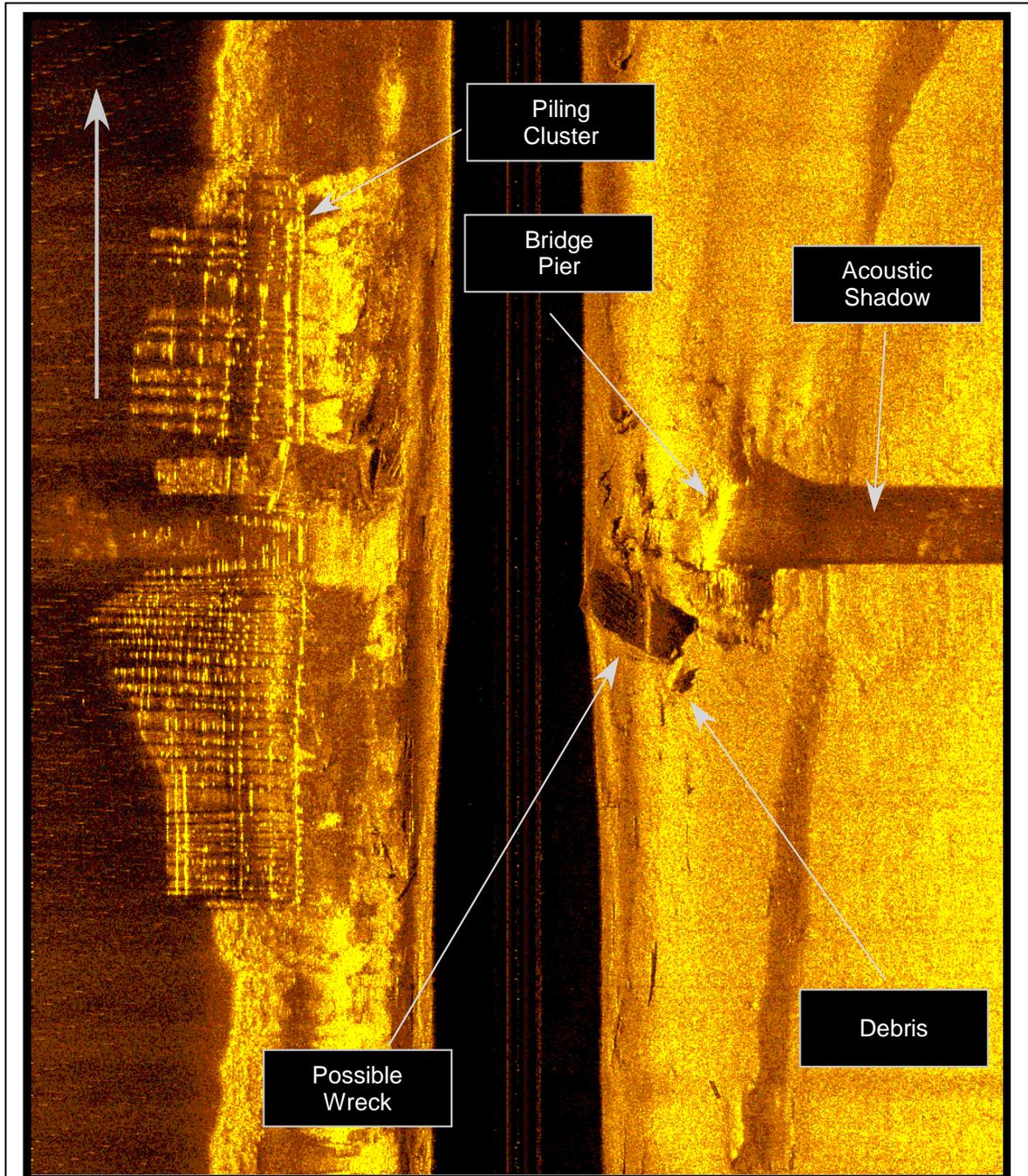


**Figure 3-3** Sidescan Sonar Data Example.

The sonar image is oriented with sidescan sonar travel direction in the up direction on the page. The data are uncorrected for slant-range. Note the shadows cast by debris indicating that material sits proud on the bottom. The sonar artifact is the result of a strong reflection from the pier on the port side being received on the starboard transducer. The long linear item identified as debris is approximately 30 feet long by 4 feet wide and is likely a log.

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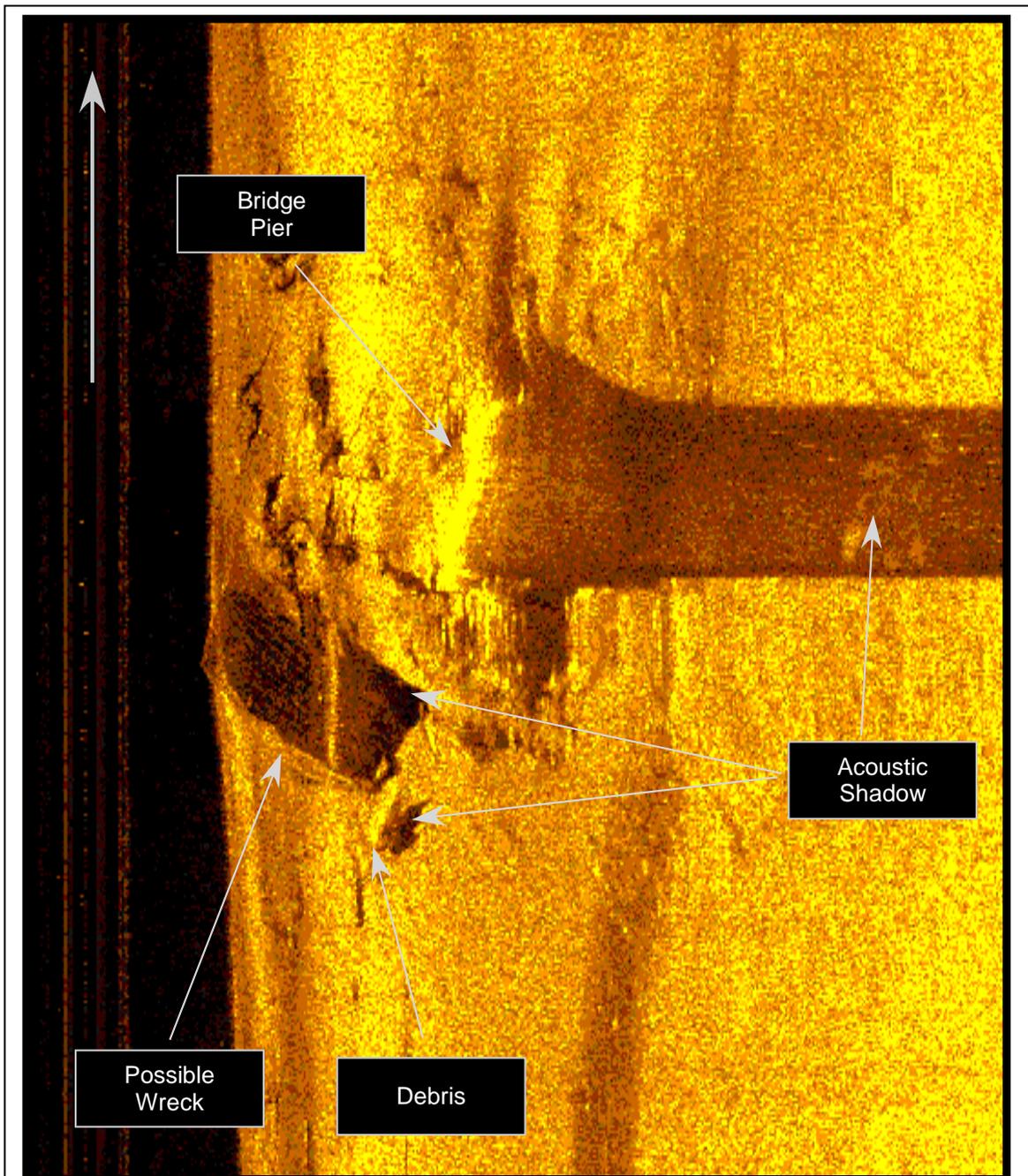


**Figure 3-4 Sidescan Sonar Data Example.**

The sonar image is oriented with sidescan sonar travel direction in the up direction on the page. The data are from the region around the west pier of the Broadway Bridge. Data are uncorrected for slant-range. Possible wreck or large piece of debris lies at the upstream base of the bridge pier.

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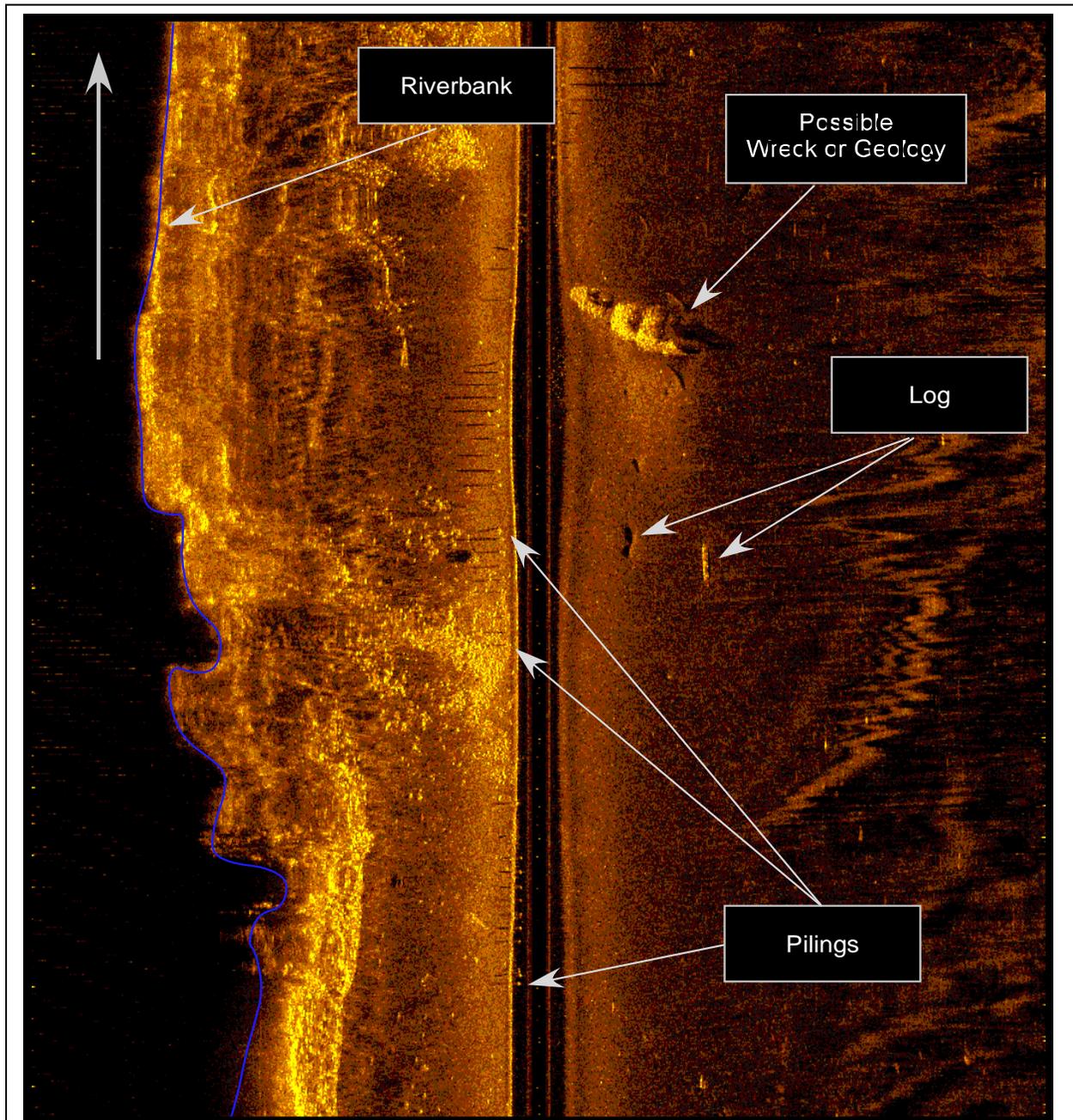


**Figure 3-5 Close-up of Figure 3-4.**

The target seen in Figure 3-4 is large, approximately 70 by 30 feet, rectangular shape with what appears to be rib structures running the length. The target sits proud on the bottom, casts a significant acoustic shadow and has apparently caused some sediment disturbance. Overall the target gives the impression of being man-made despite its being a low amplitude reflector relative to the sediments it rests upon.

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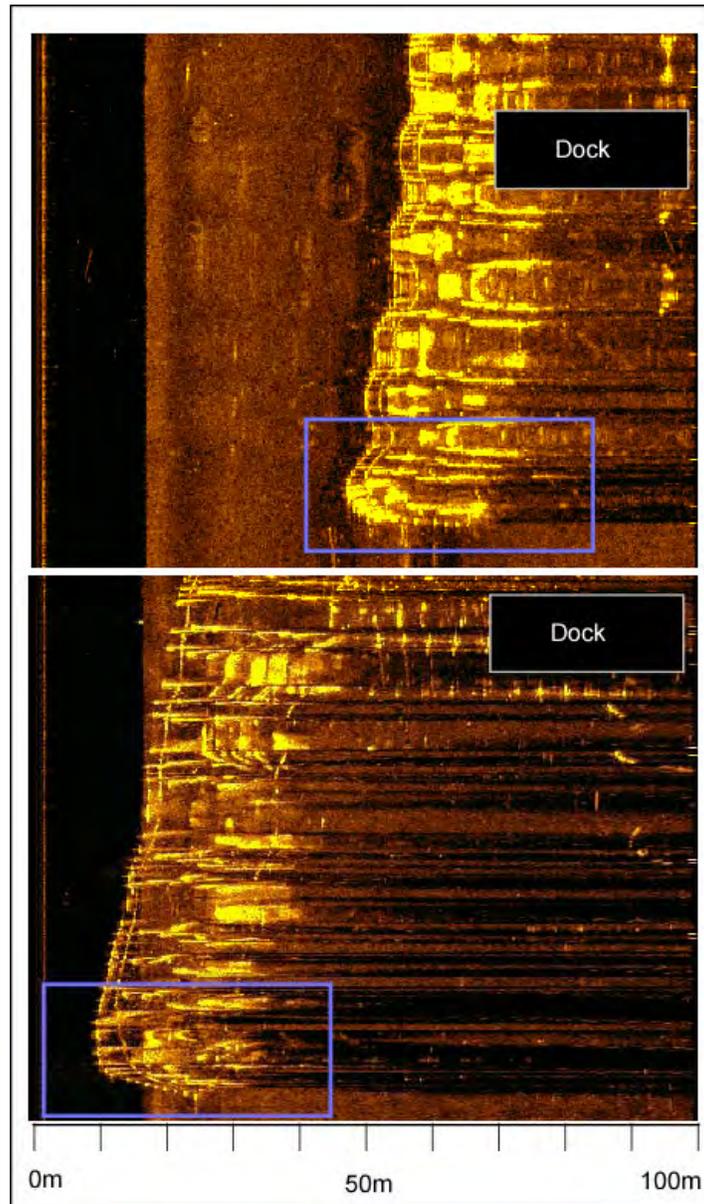


**Figure 3-6 Sidescan Sonar Data Example.**

The sonar image is oriented with sidescan sonar travel direction in the up direction on the page. The data are uncorrected for slant-range. Note the row of pilings trending along the nadir; these pilings are approximately 1-foot in diameter. The sidescan sonar crosses over these features, they were not visually observed during data collection; therefore likely only visually observed at lower river stands. The target marked as possible wreck or geology is approximately 20 feet by 70 feet. The target outline, the fact that it is a hard acoustic return, that it casts a shadow and it appears to be scoured in, is suggestive of a wreck; however, the target is consistent with a gravel left behind as a dredge artifact.

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**Figure 3-7 Sidescan Sonar Data Example**

The sonar images are oriented with sidescan sonar travel direction in the up direction on the page. The images are of the same section dock structure imaged on separate sonar lines. Note the section of pilings highlighted by the light-colored box. The pilings measure to about 1.5 to 2 feet in diameter in both images. The effect of beam-spreading is minimal across a slant-range from 10 meters in the lower image to about 70 meters in the upper image. Both data sets were acquired while running downstream at 3.2 to 3.4 knots.

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## 4. SUMMARY

### 4.1. SONAR CONTACTS

Initial analysis of the sidescan sonar data produced 7445 discrete targets; of these, 201 targets were subsequently dismissed in the classification and identification portion of the targeting process leaving a total of 7244 sonar targets identified. Maps 2-1 through 2-36 present sonar target data and a summary of the targets identified is presented in Table 4-1. A detailed list of targets and their locations is presented in Appendix A and a Google Earth-based database of contacts with images is provided digitally accompanying this volume. Sonar features are used to visually highlight the occurrence of temporary

Table 4-1 Summary of Sonar Target Classification	
Contacts	
Piling/Dolphins	4519/148
Structures	39
Logs	193
Debris	534
Debris – No Measurable Height (NMH)	875
Unclassified Targets	754
Gravel	21
Depressions	24
Anchor Drags	56
Sonar Artifacts	64
Dredge Artifacts	9
Possible Wrecks	7
Buoys	1
<b>Total</b>	<b>7244</b>

features such as vessels, oil containment booms and other features such as dock faces, bridge pilings and other structures where they might cause confusion on the sonar image.

Sonar contacts as small as 3-feet in length were common and occasionally material as small as 1-foot was identified.

Approximately two thirds of the contacts and features were clearly man-made objects (Pilings, Dolphins, and Structures) emplaced in the river for navigational, operational or engineering purposes. Approximately 25% of the remaining material was classified as either Debris, Debris–NMH (no measurable height) or unclassified (debris). Debris zones were common to the margins of dock structures and approximately a boat width away from them –a debris pattern that is consistent with commercial vessel operation patterns.

Logs account for approximately 5 percent of the contacts, with their occurrence highly localized to areas that are now or were once log-booming areas. Other geologic and cultural features included the occurrence of Gravel, Depressions, Anchor Drags and Dredge Artifacts.

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#### **4.2. SONAR MOSAIC INTERPRETATION**

A mosaic of sonar images at 1-foot pixel resolution provides the background for the upper panels of Maps 2-1 through 2-36. This image was used to create the interpreted sediment boundaries that are presented as Maps 3-1 and 3-2. The interpretations were made based on sonar backscatter intensity and sediment morphology, a process that was aided considerably by having collected the entire dataset under consistent sonar gain settings and sonar geometry.

The bulk of the river was interpreted as medium-grain sand and silt. Areas of increased sonar backscatter were interpreted as coarse-grain sand. Areas of reduced sonar backscatter were interpreted as fine-grain sand and silt. Sand waves are noted in the channel thalweg in the upper reaches of the survey area and are most notable in areas that have not been extensively dredged. Dredge zones are noted where significant.

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## 5. APPENDICES

**A. SONAR**

**CONTACTS**

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Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0005	7646985	684895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0006	7646468	686257	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0007	7646462	686268	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0008	7646374	686279	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0009	7646355	686300	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0010	7646343	686314	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0011	7646335	686324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0012	7646325	686334	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0013	7646315	686341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0014	7646307	686349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0015	7646300	686354	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0016	7646291	686361	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0017	7646283	686369	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0018	7646281	686377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0019	7646273	686382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0020	7646255	686392	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0021	7646243	686408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0022	7646235	686416	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0023	7646229	686425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0024	7646222	686434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0025	7646217	686441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0026	7646208	686452	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0027	7646205	686454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0028	7646200	686462	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0029	7646198	686468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0030	7646191	686475	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0031	7646186	686486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0032	7646166	686496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0033	7646161	686502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0034	7646154	686509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0035	7646148	686522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0036	7646142	686529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0037	7646115	686546	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0038	7646133	686529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0039	7646089	686584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0040	7646072	686612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0041	7645974	686648	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0042	7645976	686671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0043	7645966	686696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0044	7645941	686772	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0045	7645925	686798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0046	7645921	686802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0047	7645895	686819	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0048	7645125	687579	72.13	0.00	0.00	0.00	0.00	Piling	-
Contact0049	7644888	687435	91.93	0.00	0.00	0.00	0.00	Piling	-
Contact0050	7646995	685110	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0051	7646998	685127	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0052	7647004	685174	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0053	7647078	685166	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0054	7647029	685284	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0055	7647058	685386	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0056	7647010	685410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0057	7647010	685532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0058	7646350	685924	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0059	7646354	685923	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0060	7646304	685969	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0061	7646127	685862	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0062	7646586	686061	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0063	7646551	686120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0064	7646113	686559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0065	7646105	686570	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0066	7645841	686880	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0067	7645839	686885	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0068	7645835	686886	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0069	7645543	687330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0070	7645541	687340	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0071	7645538	687347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0072	7645377	687746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0073	7645368	687755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0074	7645349	687782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0075	7645339	687796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0076	7645065	688183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0077	7645035	688216	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0078	7645054	688222	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0079	7644973	688304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0080	7644963	688315	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0081	7644953	688324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0082	7644947	688332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0083	7644941	688366	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0084	7644936	688363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0085	7639902	694460	76.77	0.00	0.00	0.00	0.00	Dolphin	-
Contact0086	7639970	694334	66.15	0.00	0.00	0.00	0.00	Dolphin	-
Contact0087	7640039	694215	62.92	0.00	0.00	0.00	0.00	Dolphin	-
Contact0088	7638328	695799	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0089	7638337	695800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0090	7638525	695639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0091	7638636	695685	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0092	7638642	695684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0093	7638664	695677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0094	7638670	695673	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0095	7638681	695682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0096	7638743	695655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0097	7638765	695653	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0098	7638804	695641	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0099	7638899	695598	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0100	7638915	695589	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0101	7638938	695581	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0102	7638956	695562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0103	7638980	695550	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0104	7639028	695517	11.96	0.00	0.00	0.00	0.00	Piling	-
Contact0105	7639105	695479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0106	7639117	695444	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0107	7639161	695427	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0108	7639178	695410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0109	7639267	695364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0110	7639268	695359	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0111	7639268	695353	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0112	7639269	695345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0113	7639279	695365	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0114	7639284	695359	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0115	7639286	695349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0116	7639298	695328	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0117	7639363	695301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0118	7639369	695298	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0119	7639375	695297	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0120	7639420	695247	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0121	7639423	695239	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0122	7639436	695242	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0123	7639250	695377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0124	7639244	695381	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0125	7639230	695383	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0126	7639225	695388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0127	7639529	695186	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0128	7639521	695198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0129	7639523	695193	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0130	7640071	694185	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0131	7640078	694168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0132	7640092	694139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0133	7640110	694112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0134	7640123	694091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0135	7640187	693978	48.39	0.00	0.00	0.00	0.00	Dolphin	-
Contact0136	7640261	693841	59.87	0.00	0.00	0.00	0.00	Dolphin	-
Contact0137	7638321	695800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0138	7635193	697691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0139	7635185	697699	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0140	7635179	697700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0141	7635169	697709	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0142	7635155	697719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0143	7635329	697603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0144	7635803	697254	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0145	7635897	697203	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0146	7635911	697188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0147	7635914	697190	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0148	7635923	697185	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0149	7635927	697182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0150	7635981	697144	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0151	7635985	697137	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0152	7636104	697065	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0153	7636115	697064	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0154	7636121	697052	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0155	7636125	697051	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0156	7636136	697042	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0157	7636141	697040	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0158	7636240	696987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0159	7636271	696980	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0160	7636283	696968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0161	7636286	696965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0162	7636324	696949	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0163	7636334	696943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0164	7636350	696935	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0165	7636358	696930	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0166	7636377	696941	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0167	7636385	696929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0168	7636398	696914	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0169	7636412	696913	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0170	7636423	696900	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0171	7636454	696885	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0172	7636465	696881	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0173	7636498	696865	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0174	7636520	696865	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0175	7636540	696853	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0176	7636559	696852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0177	7636614	696827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0178	7636821	696690	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0179	7636798	696702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0180	7636772	696730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0181	7636767	696737	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0182	7636741	696758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0183	7636707	696782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0184	7636697	696791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0185	7636837	696682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0186	7637190	696443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0187	7637177	696464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0188	7639496	695216	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0189	7639481	695218	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0190	7639635	695083	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0191	7639575	695157	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0192	7639564	695167	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0193	7639416	695016	0.00	0.00	0.00	0.00	0.00	buoy	-
Contact0194	7639583	695016	3.85	0.00	7.37	0.00	1.07	debris	-
Contact0196	7639713	694951	24.50	12.70	0.00	0.00	0.00	Structure	-
Contact0198	7640495	693428	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0199	7640497	692779	17.08	19.37	20.38	0.00	4.65	Structure	-
Contact0200	7640488	692797	45.94	6.64	24.68	0.00	5.58	Structure	-
Contact0201	7635862	697103	5.03	2.49	5.37	0.00	1.63	debris	-
Contact0202	7635884	697094	7.50	8.38	3.05	0.00	0.93	Piling	-
Contact0203	7635820	697097	3.18	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0204	7635607	696915	5.78	0.00	4.81	0.00	1.63	debris	-
Contact0205	7645908	686668	28.34	28.89	28.19	0.00	12.09	Structure	-
Contact0206	7645859	686771	12.05	0.00	6.00	0.00	2.62	debris	-
Contact0207	7645536	687182	3.49	0.00	4.05	0.00	1.78	debris	-
Contact0208	7645527	687173	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0209	7645532	687160	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0210	7645528	687153	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0211	7645572	687152	0.00	0.00	0.00	0.00	0.00	debris	-
Contact0212	7645064	687964	33.63	0.00	7.93	0.00	3.66	debris	-
Contact0213	7643104	690254	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0214	7643082	690256	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0215	7643067	690255	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0216	7643054	690253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0217	7643041	690249	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0218	7643029	690257	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0219	7643023	690260	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0220	7643018	690263	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0221	7643011	690269	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0222	7643008	690271	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0223	7643003	690275	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0224	7642998	690281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0225	7642994	690284	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0226	7642987	690288	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0227	7642982	690295	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0228	7642977	690297	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0229	7642972	690300	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0230	7642968	690305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0231	7642959	690309	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0232	7642951	690314	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0233	7642946	690317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0234	7642943	690319	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0235	7642939	690321	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0236	7642928	690330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0237	7642923	690336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0238	7642920	690337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0239	7642913	690344	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0240	7642897	690355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0241	7642892	690361	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0242	7642886	690364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0243	7642879	690368	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0244	7642877	690369	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0245	7642859	690384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0246	7642856	690388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0247	7642856	690396	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0248	7642853	690403	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0249	7642850	690404	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0250	7642845	690408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0251	7642844	690410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0252	7642820	690457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0253	7642811	690468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0254	7642807	690472	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0255	7642801	690478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0256	7642797	690487	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0257	7642788	690496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0258	7642782	690503	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0259	7642778	690507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0260	7642775	690512	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0261	7642771	690515	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0262	7642768	690520	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0263	7642765	690523	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0264	7642763	690525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0265	7642763	690528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0266	7642758	690532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0267	7642756	690534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0268	7642753	690539	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0269	7642745	690550	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0270	7642742	690555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0271	7642740	690561	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0272	7642732	690578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0273	7642729	690588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0274	7642722	690593	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0275	7642719	690596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0276	7642713	690601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0277	7631054	701063	8.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0278	7631296	700969	1.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0279	7631437	701097	2.81	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0280	7631479	701122	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0281	7631430	701263	5.00	1.84	0.00	0.00	0.00	Debris - NMH	-
Contact0282	7631436	701260	1.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0283	7631418	701208	0.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0284	7631398	701227	1.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0285	7631395	701231	2.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0286	7631411	701225	2.89	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0287	7631328	701334	2.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0288	7631362	701318	0.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0289	7631451	701374	2.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0290	7631431	701369	4.92	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0291	7631578	701314	5.15	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0292	7631543	701323	2.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0293	7631571	701328	2.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0294	7631576	701330	5.07	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0295	7631576	701342	3.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0296	7631602	701097	3.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0297	7631577	701011	5.12	0.00	0.00	0.00	0.16	Debris - NMH	-
Contact0298	7631444	701030	3.07	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0299	7631517	701301	4.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0300	7631511	701283	8.81	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0301	7631514	701300	2.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0304	7631426	701268	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0305	7631427	701264	5.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0306	7631584	701367	1.99	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0307	7631592	701370	1.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0309	7631598	701361	1.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0310	7631307	701245	1.39	0.00	0.00	0.00	0.00	debris	-
Contact0311	7631512	701098	4.40	0.00	0.00	0.00	0.00	debris	-
Contact0312	7631500	701091	3.81	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0313	7631506	701072	3.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0314	7631496	701062	4.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0316	7631678	701479	0.00	0.00	0.00	0.00	0.00	Piling	Submerged

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0317	7631792	701418	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact0318	7631956	701352	4.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0319	7631978	701368	8.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0320	7631991	701359	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0322	7631778	701203	5.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0323	7631801	701180	7.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0324	7631714	701486	4.62	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0325	7631885	701348	4.90	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0326	7632406	701365	6.16	0.00	13.87	0.00	2.97	debris	-
Contact0327	7632312	701444	4.68	3.01	0.00	0.00	0.00	Debris - NMH	-
Contact0328	7632277	701475	32.32	2.96	0.00	0.00	0.00	Debris - NMH	-
Contact0329	7632194	701417	4.39	0.00	0.00	0.00	1.42	Debris - NMH	-
Contact0330	7632209	701592	3.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0332	7632175	701612	1.05	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0333	7632171	701586	3.24	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0334	7632154	701592	5.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0335	7632167	701590	4.50	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0336	7632156	701595	3.20	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0337	7632171	701625	4.15	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0338	7632019	701520	0.00	0.00	39.47	0.00	17.86	Piling	Submerged
Contact0339	7632067	701552	6.42	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0340	7632432	701695	17.81	2.80	0.00	0.00	0.00	Log	Scoured In
Contact0341	7632239	701653	5.71	0.00	3.04	0.00	1.16	debris	-
Contact0342	7632272	701658	3.19	9.49	0.00	0.00	0.00	Debris - NMH	-
Contact0344	7632278	701656	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0346	7632262	701631	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact0347	7632255	701610	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact0348	7632260	701608	6.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0349	7632319	701412	3.63	0.46	0.00	0.00	0.00	Debris - NMH	-
Contact0350	7632330	701384	6.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0351	7632496	701705	4.88	0.00	15.53	0.00	4.63	debris	-
Contact0353	7632534	701666	42.24	0.00	7.03	0.00	3.13	Log	-
Contact0354	7632627	701438	4.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0355	7632691	701781	15.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0357	7632693	701644	6.67	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0358	7632836	701705	10.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0359	7632802	701703	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0360	7632802	701706	2.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0361	7632780	701687	2.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0363	7632812	701685	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0364	7632815	701653	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0366	7632830	701639	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0367	7632848	701642	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0368	7632859	701641	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0369	7632862	701653	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0370	7632869	701659	3.26	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0371	7632889	701642	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0372	7632892	701636	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0373	7632736	701374	4.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0374	7632795	701367	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0375	7632849	701364	3.29	0.00	0.00	0.00	0.00	Debris - NMH	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0376	7632828	701450	4.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0377	7632739	701502	3.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0378	7632755	701508	1.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0379	7632762	701510	2.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0380	7632698	701503	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0381	7632709	701486	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0382	7632715	701489	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0383	7632736	701448	3.26	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0384	7632669	701492	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0385	7632646	701528	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0386	7632670	701504	1.86	2.28	0.00	0.00	0.00	Debris - NMH	-
Contact0387	7632668	701494	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0388	7632777	701808	4.21	0.00	0.00	0.00	0.00	debris	-
Contact0389	7632803	701807	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0390	7632930	701668	2.07	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0391	7632945	701651	2.72	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0392	7632943	701649	2.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0393	7632952	701654	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0394	7632970	701651	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0395	7632954	701639	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0396	7632948	701630	1.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0397	7632943	701634	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact0398	7632901	701478	1.38	3.50	0.00	0.00	0.00	Debris - NMH	-
Contact0399	7632888	701445	2.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0400	7632910	701381	2.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0401	7632485	701485	3.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0402	7632497	701486	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0403	7632522	701408	3.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0404	7632516	701530	1.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0405	7632499	701525	5.29	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0407	7615952	725843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0408	7615962	725860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0409	7615967	725872	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0410	7615974	725883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0411	7616024	725959	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0412	7616032	725971	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0413	7616042	725988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0414	7616051	726000	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0415	7616220	726287	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0416	7616225	726293	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0417	7616234	726301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0418	7616239	726308	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0419	7616242	726314	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0420	7616246	726324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0421	7616248	726331	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0422	7616311	726398	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0423	7616313	726405	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0424	7616324	726417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0425	7616331	726425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0426	7616336	726431	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0427	7616341	726438	0.00	0.00	0.00	0.00	0.00	Piling	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0428	7616348	726446	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0429	7616352	726453	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0430	7616367	726461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0431	7616383	726473	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0432	7616399	726502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0433	7616402	726514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0434	7616409	726521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0435	7616415	726526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0436	7616420	726534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0437	7616426	726541	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0438	7616431	726549	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0439	7616438	726554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0440	7616439	726560	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0441	7616442	726566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0442	7616447	726571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0443	7616461	726582	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0444	7616470	726591	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0445	7616473	726596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0446	7616479	726603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0447	7616485	726611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0448	7616509	726637	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0449	7616516	726643	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0450	7616525	726648	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0451	7616531	726656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0452	7616538	726664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0453	7616544	726669	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0454	7616550	726690	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0455	7616558	726697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0456	7616565	726701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0457	7616576	726715	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0458	7616592	726727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0459	7616604	726742	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0460	7616672	726810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0461	7616676	726813	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0462	7616678	726815	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0463	7616718	726855	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0464	7616723	726858	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0465	7616727	726863	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0466	7616734	726871	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0467	7616741	726880	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0468	7616858	726957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0469	7616882	726977	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0470	7616945	727038	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0471	7616955	727039	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0472	7616961	727044	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0473	7616990	727081	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0474	7617000	727084	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0475	7617029	727117	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0476	7617045	727133	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0477	7617051	727140	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0478	7617056	727145	0.00	0.00	0.00	0.00	0.00	Piling	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0479	7617061	727150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0480	7617069	727156	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0481	7617077	727165	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0482	7617087	727172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0483	7617107	727188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0484	7617117	727195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0485	7617125	727199	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0486	7617130	727205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0487	7617138	727212	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0488	7617146	727218	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0489	7617154	727223	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0490	7617179	727252	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0491	7617191	727262	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0492	7617196	727268	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0493	7617206	727273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0494	7617224	727284	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0495	7617255	727305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0496	7617262	727309	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0497	7617268	727312	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0498	7617275	727317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0499	7617281	727323	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0500	7617288	727327	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0501	7617294	727332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0502	7617303	727337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0503	7617310	727342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0504	7617318	727347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0505	7617338	727363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0506	7617345	727366	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0507	7617351	727371	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0508	7617358	727375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0509	7617365	727377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0510	7617373	727382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0511	7617386	727392	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0512	7617394	727399	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0513	7617402	727402	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0514	7617488	727461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0515	7617488	727443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0516	7617507	727471	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0517	7617519	727476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0518	7617529	727482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0519	7617535	727486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0520	7617542	727490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0521	7617552	727495	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0522	7617560	727499	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0523	7617566	727503	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0524	7617584	727513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0525	7617591	727517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0526	7617675	727566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0527	7617683	727571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0528	7617698	727580	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0529	7617841	727686	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0530	7617852	727689	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0531	7617870	727697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0532	7617892	727705	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0533	7618978	728351	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0534	7618975	728349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0535	7618968	728345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0536	7619796	728884	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact0537	7619802	728883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0538	7619806	728887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0539	7620321	729422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0540	7620328	729431	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0541	7620337	729435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0542	7620341	729439	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0543	7620345	729444	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0544	7620355	729451	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0545	7620362	729458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0546	7620365	729464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0547	7620370	729468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0548	7621095	730323	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact0549	7617113	727135	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact0550	7617400	727328	11.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0551	7615874	725626	10.01	0.00	0.00	0.00	0.00	Dolphin	-
Contact0552	7615569	724934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0553	7615564	724940	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0554	7615558	724946	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0555	7615552	724952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0556	7615547	724958	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0557	7615542	724967	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0558	7615551	724969	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0559	7615559	724968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0560	7615569	724965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0561	7615576	724965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0562	7615574	724975	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0563	7615571	724980	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0564	7615564	724987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0565	7615559	724991	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0566	7615553	724997	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0567	7615548	725003	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0568	7615542	725009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0569	7615538	725017	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0570	7615549	725018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0571	7615555	725016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0572	7615563	725012	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0573	7615569	725009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0574	7615581	725003	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0575	7615713	724923	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0576	7615551	725027	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0577	7615547	725031	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0578	7615544	725034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0579	7615545	725040	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0580	7615544	725048	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0581	7615544	725048	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0582	7615546	725049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0583	7615552	725051	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0584	7615892	725666	14.99	0.00	0.00	0.00	0.00	Dolphin	-
Contact0585	7616322	726425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0586	7616323	726429	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0587	7616328	726437	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0588	7616337	726447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0589	7616346	726457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0590	7616351	726465	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0591	7616359	726477	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0592	7616386	726510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0593	7616390	726512	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0594	7616390	726513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0595	7616391	726514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0596	7616377	726496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0597	7616381	726501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0598	7616370	726491	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0599	7616395	726519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0600	7616397	726522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0601	7616399	726524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0602	7616400	726527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0603	7616402	726529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0604	7616405	726535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0605	7616408	726536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0606	7616410	726537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0607	7616409	726536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0608	7616405	726534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0609	7616399	726524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0610	7616400	726525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0611	7616404	726529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0612	7616409	726537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0613	7616417	726547	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0614	7616434	726572	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0615	7616441	726582	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0616	7616454	726599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0617	7616460	726605	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0618	7616471	726612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0619	7616475	726614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0620	7616472	726614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0621	7616473	726614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0622	7616482	726620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0623	7616488	726626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0624	7616495	726632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0625	7616499	726639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0626	7616499	726638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0627	7616491	726630	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0628	7616486	726625	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0629	7616488	726628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0630	7616490	726630	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0631	7616489	726629	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0632	7616486	726625	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0633	7616484	726624	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0634	7616481	726619	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0635	7616479	726619	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0636	7616480	726620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0637	7616484	726624	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0638	7616488	726628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0639	7616491	726630	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0640	7616490	726628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0641	7616489	726625	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0642	7616494	726632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0643	7616496	726640	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0644	7616501	726643	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0645	7616511	726651	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0646	7616521	726660	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0647	7616526	726663	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0648	7616519	726657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0649	7616517	726655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0650	7616516	726660	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0651	7616521	726668	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0652	7617609	727535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0653	7617609	727535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0654	7617419	727422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0655	7617435	727432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0656	7617446	727439	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0657	7617459	727447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0658	7617463	727455	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0659	7617471	727460	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0660	7617483	727463	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0661	7617494	727470	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0662	7617250	727305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0663	7617243	727301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0664	7617236	727295	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0665	7617176	727252	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0666	7616645	726783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0667	7616632	726772	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0668	7616626	726769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0669	7616621	726765	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0670	7616615	726759	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0671	7616613	726752	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0672	7616606	726746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0673	7616595	726733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0674	7616584	726721	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0675	7616575	726712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0676	7616567	726701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0677	7616560	726693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0678	7616554	726688	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0679	7616549	726688	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0680	7616543	726687	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0681	7616537	726684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0682	7616533	726677	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0683	7616529	726667	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0684	7616528	726663	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0685	7616528	726667	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0686	7616530	726670	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0687	7616527	726675	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0688	7615392	723694	83.58	5.34	4.22	0.00	1.45	Log	-
Contact0689	7615797	724053	2.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0690	7615777	723895	7.81	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0691	7615753	723992	11.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0692	7615626	723647	1.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact0693	7615552	724804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0694	7615574	724861	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0695	7615565	724843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0696	7615562	724829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0697	7615556	724816	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0698	7615554	724812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0699	7615544	724781	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0700	7615539	724770	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0701	7615538	724766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0702	7615535	724761	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0703	7615531	724760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0704	7615527	724751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0705	7615528	724744	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0706	7615525	724741	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0707	7615520	724734	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0708	7615521	724726	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0709	7615521	724723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0710	7615518	724723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0711	7615515	724721	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0712	7615515	724719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0713	7615514	724714	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0714	7615512	724713	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0715	7615512	724711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0716	7615511	724711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0717	7615510	724710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0718	7615510	724706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0719	7615510	724703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0720	7615509	724699	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0721	7615509	724696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0722	7615504	724691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0723	7615500	724684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0724	7615497	724678	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0725	7615489	724655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0726	7615487	724650	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0727	7615486	724646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0728	7615484	724642	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0729	7615477	724623	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0730	7615475	724615	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0731	7615458	724575	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0732	7615450	724554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0733	7615450	724552	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0734	7615444	724529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0735	7615438	724519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0736	7615436	724515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0737	7615432	724500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0738	7615433	724494	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0739	7615428	724484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0740	7615426	724482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0741	7615424	724479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0742	7615421	724476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0743	7615417	724468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0744	7615417	724460	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0745	7615419	724454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0746	7615416	724453	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0747	7615413	724452	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0748	7615407	724444	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0749	7615406	724438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0750	7615409	724435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0751	7615410	724433	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0752	7615411	724430	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0753	7615410	724429	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0754	7615400	724412	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0755	7615398	724409	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0756	7615397	724407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0757	7615395	724400	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0758	7615392	724395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0759	7615389	724393	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0760	7615388	724389	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0761	7615388	724377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0762	7615385	724370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0763	7615384	724368	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0764	7615381	724364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0765	7615379	724355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0766	7615377	724342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0767	7615372	724335	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0768	7615372	724324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0769	7615344	724066	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0770	7615345	724069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0771	7615341	724070	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0772	7615338	724069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0773	7615356	724285	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0774	7615354	724281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0775	7615349	724268	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0776	7615346	724257	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0777	7615343	724245	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0778	7615341	724238	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0779	7615338	724229	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0780	7615333	724214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0781	7615331	724210	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0782	7615329	724208	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0783	7615325	724205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0784	7615328	724202	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0785	7615330	724200	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0786	7615330	724198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0787	7615328	724198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0788	7615327	724198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0789	7615323	724198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0790	7615322	724196	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0791	7615321	724185	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0792	7615319	724180	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0793	7615320	724175	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0794	7615319	724171	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0795	7615317	724168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0796	7615313	724165	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0797	7615309	724160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0798	7615306	724157	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0799	7615305	724151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0800	7615308	724150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0801	7615310	724149	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0802	7615311	724148	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0803	7615311	724147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0804	7615310	724147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0805	7615312	724145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0806	7615312	724141	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0807	7615312	724137	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0808	7615295	724116	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0809	7615289	724106	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0810	7615289	724091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0811	7615294	724086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0812	7615293	724084	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0813	7615288	724083	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0814	7615285	724081	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0815	7615285	724076	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0816	7615286	724074	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0817	7615290	724073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0818	7615289	724072	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0819	7615288	724074	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0820	7615290	724076	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0821	7615289	724079	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0822	7615289	724082	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0823	7615292	724082	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0824	7615291	724082	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0825	7615062	720793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0826	7615060	720786	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0827	7615053	720785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0828	7615042	720784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0829	7615028	720778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0830	7615214	722873	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0831	7615306	723401	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0832	7615310	723438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0833	7615315	723662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0834	7615327	723703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0835	7615282	723707	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0836	7615284	723671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0837	7615336	724009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0838	7615348	724011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0839	7615346	724020	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0840	7615334	724019	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0841	7615339	724246	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0842	7615341	724255	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0843	7615345	724268	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0844	7615346	724275	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0845	7615350	724290	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0846	7615352	724295	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0847	7615359	724302	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0848	7615362	724325	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0849	7615366	724330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0850	7615372	724343	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0851	7615376	724352	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0852	7615378	724365	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0853	7615383	724377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0854	7615386	724382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0855	7615389	724390	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0856	7615391	724398	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0857	7615395	724407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0858	7615396	724413	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0859	7615398	724417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0860	7615403	724425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0861	7615405	724435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0862	7615409	724445	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0863	7615412	724454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0864	7615414	724464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0865	7615419	724471	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0866	7615421	724481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0867	7615425	724490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0868	7615429	724500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0869	7615432	724508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0870	7615436	724518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0871	7615438	724521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0872	7615437	724523	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0873	7615441	724532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0874	7615450	724553	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0875	7615474	724620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0876	7615476	724630	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0877	7615480	724639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0878	7615483	724650	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0879	7615485	724657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0880	7615490	724665	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0881	7615494	724677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0882	7615500	724686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0883	7615504	724694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0884	7615507	724706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0885	7615528	724730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0886	7615531	724741	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0887	7615537	724748	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0888	7615539	724758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0889	7615544	724765	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0890	7615552	724783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0891	7615556	724792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0892	7615562	724804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0893	7615569	724812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0894	7615572	724829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0895	7615561	724921	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0896	7615555	724932	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0897	7615554	724940	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0898	7615550	724951	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0899	7615550	724964	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0900	7615547	724974	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0901	7615544	724982	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0902	7615540	724988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0903	7615536	724997	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0904	7615532	725009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0905	7615535	725013	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0906	7615535	725022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0907	7615531	725030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0908	7615532	725036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0909	7615534	725041	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0910	7615537	725052	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0911	7615540	725057	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0912	7615544	725063	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0913	7615546	725068	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0914	7615551	725078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0915	7615551	725088	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0916	7615557	725102	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0917	7615565	725112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0918	7615572	725131	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0919	7615576	725142	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0920	7615575	725150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0921	7615586	725167	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0922	7615589	725174	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0923	7615590	725180	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0924	7615592	725187	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0925	7615598	725200	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0926	7615604	725209	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0927	7615606	725215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0928	7615612	725222	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0929	7615616	725234	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0930	7615621	725240	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0931	7615629	725258	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0932	7615633	725266	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0933	7615637	725272	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0934	7615642	725277	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0935	7615645	725286	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0936	7615648	725292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0937	7615652	725297	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0938	7615654	725304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0939	7615657	725324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0940	7615670	725333	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0941	7615673	725340	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0942	7615674	725347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0943	7615675	725351	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0944	7615680	725357	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0945	7615692	725377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0946	7615696	725384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0947	7615698	725390	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0948	7615706	725408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0949	7615713	725418	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0950	7615715	725438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0951	7615725	725443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0952	7615728	725451	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0953	7615733	725461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0954	7615727	725468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0955	7615738	725470	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0956	7615741	725478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0957	7615744	725486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0958	7615750	725496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0959	7615753	725502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0960	7615756	725509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0962	7615765	725516	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0963	7615765	725525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0964	7615768	725529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0965	7615772	725536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0966	7615775	725542	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0967	7615779	725546	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0968	7615795	725554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0969	7615791	725569	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0970	7615794	725576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0971	7615799	725584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0972	7615804	725589	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0973	7615808	725595	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0974	7615878	725654	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0975	7615886	725743	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0976	7615888	725752	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0977	7615949	725840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0978	7615959	725858	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0979	7615965	725870	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0980	7615974	725881	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0981	7616023	725959	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0982	7616030	725968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0983	7616040	725985	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0984	7616052	726002	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0985	7616151	726210	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0986	7616179	726250	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0987	7616210	726286	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0988	7616214	726290	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0989	7616218	726295	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact0990	7616220	726298	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0991	7616224	726304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0992	7616230	726309	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0993	7616236	726316	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0994	7616289	726394	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0995	7616308	726406	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0996	7616322	726422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0997	7616326	726428	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0998	7616330	726435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact0999	7616335	726441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1000	7616342	726451	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1001	7616346	726457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1002	7616356	726471	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1003	7616374	726492	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1004	7616382	726503	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1005	7616387	726511	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1006	7616393	726520	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1007	7616398	726527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1008	7616403	726534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1009	7616410	726541	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1010	7616415	726549	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1011	7616421	726550	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1012	7616426	726554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1013	7616427	726557	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1014	7616430	726560	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1015	7615975	717625	77.90	0.00	0.00	0.00	0.00	Dolphin	-
Contact1016	7615925	717753	81.08	0.00	0.00	0.00	0.00	Dolphin	-
Contact1017	7615860	717917	85.42	0.00	0.00	0.00	0.00	Dolphin	-
Contact1018	7615784	718087	81.14	0.00	0.00	0.00	0.00	Dolphin	-
Contact1019	7615662	718391	59.09	0.00	0.00	0.00	0.00	Dolphin	-
Contact1020	7615472	718765	20.11	0.00	0.00	0.00	0.00	Dolphin	-
Contact1021	7615325	718904	24.98	0.00	0.00	0.00	0.00	Dolphin	-
Contact1022	7615237	719056	15.50	0.00	0.00	0.00	0.00	Dolphin	-
Contact1023	7615156	719202	17.98	0.00	0.00	0.00	0.00	Dolphin	-
Contact1024	7615064	719358	25.87	0.00	0.00	0.00	0.00	Dolphin	-
Contact1025	7614248	720016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1026	7614345	719991	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1027	7614460	719917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1028	7614545	719857	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1029	7614632	719793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1030	7614577	719813	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1031	7614948	719541	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1032	7614981	719490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1033	7614988	719483	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1034	7614992	719476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1035	7615057	719488	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1036	7615067	719514	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact1037	7615155	719178	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1038	7615095	719196	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1039	7615192	719112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1040	7615198	719097	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1041	7615201	719093	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1042	7615203	719085	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1043	7615205	719078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1044	7615206	719074	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1045	7615216	719075	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1046	7615209	719064	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1047	7615220	719034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1048	7615222	719030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1049	7615223	719026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1050	7615224	719018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1051	7615232	719000	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1052	7615234	718995	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1053	7615234	718988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1054	7615247	718957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1055	7615249	718952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1056	7615249	718949	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1057	7615249	718945	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1058	7615249	718940	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1059	7615250	718933	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1060	7615253	718928	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1061	7615258	718921	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1062	7615262	718914	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1063	7615827	717960	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1064	7615813	717994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1065	7615797	718025	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1066	7615873	717849	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1067	7615881	717828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1068	7615886	717819	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1069	7615899	717786	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1070	7615893	717777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1071	7615855	717762	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1072	7615987	717548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1073	7612314	720502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1074	7612261	720522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1075	7612424	720425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1076	7612470	720396	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1077	7612524	720367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1078	7612568	720342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1079	7612614	720318	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1080	7612664	720289	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1081	7612704	720270	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1082	7612935	720182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1083	7613051	720154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1084	7613015	720161	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1085	7612970	720175	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1086	7612889	720193	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1087	7612860	720198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1088	7612875	720192	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1089	7612384	720449	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1090	7613226	720155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1091	7613508	720041	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1092	7613645	720017	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1093	7614084	719983	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1094	7614148	719975	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1095	7614374	719906	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1096	7614695	719722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1097	7614709	719739	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1098	7614864	719623	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1099	7615334	718847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1100	7615378	718767	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1101	7615383	718757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1102	7615384	718757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1103	7615386	718748	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1104	7615413	718727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1105	7615419	718655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1106	7615441	718610	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1107	7615476	718548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1108	7615546	718421	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1109	7615947	717669	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1110	7615938	717691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1111	7613171	720345	26.21	0.00	2.97	0.00	1.14	Log	-
Contact1112	7613158	720358	35.13	0.00	3.74	0.00	1.17	Log	-
Contact1113	7613108	720358	20.01	0.00	3.03	0.00	1.00	Log	-
Contact1114	7613108	720349	13.00	0.00	1.26	0.00	0.47	Log	-
Contact1115	7613274	720173	17.24	0.00	1.70	0.00	0.74	Log	-
Contact1116	7614454	720053	27.00	1.95	1.70	0.00	0.61	Log	-
Contact1117	7614470	720057	25.28	0.00	2.93	0.00	0.88	Log	-
Contact1118	7614447	720062	20.72	0.00	0.00	0.00	0.00	Log	-
Contact1119	7614431	720071	10.15	0.00	0.00	0.00	0.00	Log	-
Contact1120	7614426	720078	21.05	0.00	0.00	0.00	0.00	Log	-
Contact1121	7614440	720109	24.47	0.00	0.00	0.00	0.00	Log	-
Contact1122	7614442	720121	29.67	0.00	0.00	0.00	0.00	Log	-
Contact1123	7614430	720145	16.90	2.19	0.00	0.00	0.00	Log	-
Contact1124	7614424	720153	8.11	0.00	0.00	0.00	0.00	Log	-
Contact1125	7614434	720137	11.68	0.00	0.00	0.00	0.00	Log	-
Contact1126	7614483	719985	20.36	0.00	1.22	0.00	0.87	Log	-
Contact1127	7614500	719980	25.55	0.00	2.44	0.00	1.50	Log	-
Contact1128	7614552	719997	38.90	3.78	0.00	0.00	0.00	Log	-
Contact1129	7614502	719997	17.87	0.00	1.70	0.00	0.84	Log	-
Contact1130	7614712	720054	54.20	1.70	4.87	0.00	0.51	Log	-
Contact1131	7614716	720037	40.29	0.00	6.59	0.00	0.71	Log	-
Contact1132	7614705	720032	36.05	0.00	0.00	0.00	0.00	Log	-
Contact1133	7614687	720017	49.32	0.00	0.00	0.00	0.00	Log	-
Contact1134	7614672	720012	26.30	0.00	0.00	0.00	0.00	Log	-
Contact1135	7614752	719853	15.79	1.70	0.00	0.00	0.00	Log	-
Contact1136	7614771	719850	25.13	0.00	0.00	0.00	0.00	Log	-
Contact1137	7614779	719853	21.37	0.00	0.00	0.00	0.00	Log	-
Contact1138	7614791	719835	15.87	0.00	0.00	0.00	0.00	Log	-
Contact1139	7614668	719800	16.74	0.00	0.00	0.00	0.00	Log	-
Contact1140	7614667	719753	35.23	0.00	0.00	0.00	0.00	Log	-
Contact1141	7614705	719788	16.55	0.00	0.00	0.00	0.00	Log	-
Contact1142	7614721	719921	45.54	3.42	0.00	0.00	0.00	Log	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1143	7614665	719928	13.37	4.52	5.62	0.00	1.49	debris	-
Contact1144	7614570	719960	23.64	2.93	2.93	0.00	1.18	Log	-
Contact1145	7614569	719966	15.37	2.44	0.00	0.00	0.00	Log	-
Contact1146	7614688	720103	15.48	4.62	0.00	0.00	0.00	Log	-
Contact1147	7614652	720058	34.37	0.00	3.89	0.00	0.47	Sonar Artifact	-
Contact1148	7614845	719769	21.19	0.00	2.12	0.00	0.92	Log	-
Contact1150	7614868	719772	37.04	0.00	0.00	0.00	0.00	Log	-
Contact1151	7614878	719758	20.52	0.00	0.00	0.00	0.00	Log	-
Contact1152	7614893	719729	24.33	0.00	0.00	0.00	0.00	Log	-
Contact1153	7614829	719687	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1154	7614774	719695	38.02	4.60	0.00	0.00	0.00	unclassified	-
Contact1155	7614752	719698	35.21	0.00	0.00	0.00	0.00	Log	-
Contact1156	7614755	719583	42.04	5.64	4.70	0.00	0.54	Log	-
Contact1157	7614771	719603	43.15	4.75	0.00	0.00	0.00	Log	-
Contact1158	7614772	719611	41.89	0.00	0.00	0.00	0.00	Log	-
Contact1159	7614773	719618	43.21	0.00	0.00	0.00	0.00	Log	-
Contact1160	7614967	719569	35.83	2.86	0.00	0.00	0.00	Log	-
Contact1162	7614903	719613	19.66	0.00	0.00	0.00	0.00	Log	-
Contact1163	7615211	719157	26.72	3.83	0.00	0.00	0.00	Log	-
Contact1164	7615215	719191	19.97	4.04	0.00	0.00	0.00	Log	-
Contact1165	7615183	719213	37.25	3.23	0.00	0.00	0.00	Log	-
Contact1166	7615175	719247	12.49	1.51	0.00	0.00	0.00	Log	-
Contact1167	7615177	719250	11.57	1.74	0.00	0.00	0.00	Log	-
Contact1168	7615176	719247	12.31	0.00	0.00	0.00	0.00	Log	-
Contact1169	7615138	719296	8.09	1.46	0.00	0.00	0.00	Log	-
Contact1170	7615153	719322	24.27	0.00	0.00	0.00	0.00	Log	-
Contact1171	7615073	719323	33.57	2.83	0.00	0.00	0.00	Log	-
Contact1172	7615242	719333	24.02	4.38	0.00	0.00	0.00	Log	-
Contact1173	7615253	719329	22.80	0.00	0.00	0.00	0.00	Log	-
Contact1174	7615260	719305	38.11	3.66	0.00	0.00	0.00	Log	-
Contact1175	7615268	719286	25.04	2.50	0.00	0.00	0.00	Log	-
Contact1176	7615285	719268	25.94	0.00	0.00	0.00	0.00	Log	-
Contact1177	7615279	719250	15.81	1.48	1.72	0.00	0.73	Log	-
Contact1178	7615276	719249	20.37	3.00	0.00	0.00	0.00	Log	-
Contact1179	7615269	719248	18.59	0.00	0.00	0.00	0.00	Log	-
Contact1180	7615460	718927	25.36	0.00	0.00	0.00	0.00	Log	-
Contact1181	7615445	718939	13.06	0.00	22.10	0.00	7.96	Log	-
Contact1182	7615436	718964	19.81	0.00	46.53	0.00	10.91	Log	?
Contact1183	7615415	718982	18.43	0.00	0.00	0.00	0.00	Log	-
Contact1184	7615382	719064	24.37	2.40	0.00	0.00	0.00	Log	-
Contact1185	7615376	719099	28.79	0.00	0.00	0.00	0.00	Log	-
Contact1186	7615295	719037	19.04	1.29	0.00	0.00	0.00	unclassified	-
Contact1187	7615308	719008	38.66	0.00	0.00	0.00	0.00	unclassified	-
Contact1188	7615411	719197	53.36	5.42	0.00	0.00	0.00	Log	-
Contact1189	7615775	718498	9.47	0.00	0.00	0.00	0.00	Log	-
Contact1190	7615769	718508	11.82	2.08	0.00	0.00	0.00	Log	-
Contact1191	7615786	718498	8.59	3.75	0.00	0.00	0.00	unclassified	-
Contact1193	7615783	718470	12.50	0.00	0.00	0.00	0.00	Log	-
Contact1194	7615820	718398	2.70	1.04	0.00	0.00	0.00	Debris - NMH	-
Contact1195	7615929	718227	14.18	1.23	0.00	0.00	0.00	Log	-
Contact1196	7615906	718192	16.79	0.00	0.00	0.00	0.00	Log	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1197	7615946	718141	16.18	2.27	0.00	0.00	0.00	unclassified	-
Contact1198	7615993	718060	13.12	1.84	0.00	0.00	0.00	Log	-
Contact1199	7615650	718231	21.61	0.00	15.35	0.00	4.65	Piling	Submerged
Contact1200	7615696	718231	15.92	0.00	41.36	0.00	24.56	Piling	Submerged
Contact1201	7615658	718095	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1202	7615754	718136	0.78	0.00	36.78	0.00	27.04	Piling	-
Contact1203	7616063	718054	24.51	0.57	0.00	0.00	0.00	Log	-
Contact1204	7616061	718060	1.74	1.00	0.00	0.00	0.00	Debris - NMH	-
Contact1205	7616072	717826	27.13	1.28	0.00	0.00	0.00	Log	-
Contact1206	7616067	717853	19.83	1.42	0.00	0.00	0.00	Log	-
Contact1207	7616112	717718	8.61	1.27	0.00	0.00	0.00	debris	-
Contact1208	7616246	717852	0.72	1.46	0.00	0.00	0.00	Debris - NMH	-
Contact1209	7616156	718002	3.38	2.19	0.00	0.00	0.00	Debris - NMH	-
Contact1210	7615864	718258	4.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1211	7615864	718281	2.66	3.22	0.00	0.00	0.00	Debris - NMH	-
Contact1213	7615668	718174	3.64	5.44	26.20	0.00	8.25	debris	-
Contact1214	7615553	718367	3.12	2.49	0.00	0.00	0.00	Debris - NMH	-
Contact1215	7615521	718354	6.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1216	7615580	718367	4.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1217	7615417	718576	7.24	6.25	0.00	0.00	0.00	Debris - NMH	-
Contact1218	7615499	718513	4.26	0.00	4.96	0.00	0.79	debris	-
Contact1219	7615488	718516	5.35	3.29	0.00	0.00	0.00	Debris - NMH	-
Contact1220	7615593	718560	5.51	3.76	4.75	0.00	2.85	debris	-
Contact1221	7615681	718589	2.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1222	7615738	718583	16.62	6.68	4.97	0.00	1.18	debris	-
Contact1223	7615225	719572	11.98	1.92	1.92	0.00	0.30	debris	-
Contact1224	7615280	719593	8.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1225	7615254	719665	6.37	0.00	0.00	0.00	0.00	debris	-
Contact1226	7614822	720097	33.88	3.42	0.00	0.00	0.00	Log	-
Contact1227	7614461	720024	0.00	14.43	2.19	0.00	1.03	Log	-
Contact1228	7614473	720033	21.53	0.00	0.00	0.00	0.00	Log	-
Contact1229	7614181	720115	36.93	0.00	6.78	0.00	3.46	Log	-
Contact1230	7614061	719895	3.90	2.41	0.00	0.00	0.00	Piling	-
Contact1231	7612572	720623	23.06	3.10	0.00	0.00	0.00	Log	-
Contact1232	7611782	721474	8.43	0.00	0.00	0.00	0.00	Piling	-
Contact1233	7611952	721416	5.14	0.00	0.00	0.00	0.00	Piling	-
Contact1234	7612093	721309	7.17	3.22	0.00	0.00	0.00	Piling	-
Contact1235	7612191	721231	0.90	0.00	0.00	0.00	0.00	Piling	-
Contact1236	7612275	721163	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1237	7612363	721095	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1238	7612464	720994	16.08	0.00	0.00	0.00	0.00	Piling	-
Contact1239	7612516	721052	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1240	7612499	720977	8.89	0.00	0.00	0.00	0.00	Piling	Submerged
Contact1241	7612717	720887	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact1242	7612916	720689	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1243	7613911	720498	19.12	0.00	0.00	0.00	0.00	Piling	-
Contact1244	7614800	720419	26.83	0.00	0.00	0.00	0.00	Piling	-
Contact1245	7615003	720306	8.48	0.00	0.00	0.00	0.00	Piling	-
Contact1246	7611838	721473	4.68	0.00	4.12	0.00	1.26	debris	-
Contact1247	7611916	721440	20.73	0.00	0.00	0.00	0.00	Log	-
Contact1248	7612099	721186	20.83	0.00	0.00	0.00	0.00	Log	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1249	7612355	720936	37.05	0.00	0.00	0.00	0.00	Log	-
Contact1250	7612334	720936	18.51	0.00	0.00	0.00	0.00	Log	-
Contact1251	7612335	720952	12.30	0.00	0.00	0.00	0.00	Log	-
Contact1252	7612360	720947	14.44	0.00	0.00	0.00	0.00	Log	-
Contact1253	7612384	720911	30.32	0.00	0.00	0.00	0.00	Log	-
Contact1254	7612362	720926	10.26	0.00	0.00	0.00	0.00	Log	-
Contact1255	7612423	720917	17.32	0.00	0.00	0.00	0.00	Log	-
Contact1256	7612430	720898	29.98	0.00	0.00	0.00	0.00	Log	-
Contact1257	7612393	720926	15.37	0.00	0.00	0.00	0.00	Log	-
Contact1258	7612397	720915	12.57	0.00	0.00	0.00	0.00	Log	-
Contact1259	7612422	720876	12.88	0.00	0.00	0.00	0.00	Log	-
Contact1260	7612493	720844	18.51	0.00	0.00	0.00	0.00	Log	-
Contact1261	7612320	720977	17.90	0.00	0.00	0.00	0.00	Log	-
Contact1262	7612233	721024	12.65	0.00	0.00	0.00	0.00	Log	-
Contact1263	7612203	721017	16.41	0.00	0.00	0.00	0.00	Log	-
Contact1264	7612132	721088	26.96	0.00	0.00	0.00	0.00	Log	-
Contact1265	7612074	721112	19.55	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact1266	7612681	720987	40.17	0.00	0.00	0.00	0.00	Log	-
Contact1267	7612674	720974	28.55	0.00	0.00	0.00	0.00	Log	-
Contact1268	7612672	720962	24.92	0.00	0.00	0.00	0.00	Log	-
Contact1269	7612668	720953	27.40	0.00	0.00	0.00	0.00	Log	-
Contact1270	7612645	720959	14.72	0.00	0.00	0.00	0.00	Log	-
Contact1271	7612640	720999	20.41	0.00	0.00	0.00	0.00	Log	-
Contact1272	7612627	720989	21.24	0.00	0.00	0.00	0.00	Log	-
Contact1273	7612551	720839	18.22	0.00	0.00	0.00	0.00	Log	-
Contact1274	7612552	720843	16.47	0.00	0.00	0.00	0.00	Log	-
Contact1275	7612563	720838	29.17	0.00	0.00	0.00	0.00	Log	-
Contact1276	7612608	720797	27.89	0.00	5.51	0.00	2.68	Log	-
Contact1277	7612627	720763	23.28	0.00	0.00	0.00	0.00	Log	-
Contact1278	7612651	720751	18.70	0.00	0.00	0.00	0.00	Log	-
Contact1279	7612692	720754	28.11	1.69	4.89	0.00	3.35	Log	-
Contact1280	7612929	720808	26.93	6.09	0.00	0.00	0.00	Log	-
Contact1281	7614059	720339	23.25	0.00	5.07	0.00	1.76	Log	-
Contact1282	7614083	720351	18.25	1.55	0.00	0.00	0.00	Log	-
Contact1283	7614111	720375	16.20	1.72	0.00	0.00	0.00	Log	-
Contact1284	7627406	704405	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1285	7632126	699351	1.31	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1286	7632093	699446	0.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1287	7632113	699480	1.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1288	7632109	699484	0.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1289	7632026	699389	3.29	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1290	7632001	699407	3.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1291	7632014	699506	0.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1292	7632029	699516	0.76	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1293	7632032	699529	0.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1294	7632036	699562	0.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1295	7632304	699615	1.29	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1296	7632305	699618	1.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1297	7632193	699718	0.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1298	7632173	699712	2.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1299	7632168	699728	0.56	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1300	7632164	699722	1.63	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1301	7632158	699716	0.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1302	7632188	699727	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1303	7632516	699081	0.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1304	7631989	699559	1.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1305	7631986	699558	0.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1306	7631974	699574	1.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1307	7631937	699652	4.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1308	7632038	699800	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1309	7632121	699723	1.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1310	7631856	699698	0.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1311	7631700	700201	0.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1312	7631701	700237	0.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1313	7631544	700362	3.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1314	7631611	700427	4.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1315	7631594	700440	0.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1316	7631591	700443	1.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1317	7631580	700456	2.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1318	7630973	701567	3.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1319	7630975	701561	0.64	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1320	7630946	701541	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1321	7630953	701544	0.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1322	7630956	701543	1.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1323	7630957	701543	0.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1324	7630920	701521	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1325	7630922	701518	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1326	7630914	701529	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1327	7630988	701541	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1328	7630963	701522	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1329	7630976	701510	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1330	7630990	701525	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1331	7630984	701518	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1332	7630972	701505	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1333	7630981	701497	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1334	7631002	701515	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1335	7631017	701516	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1336	7630991	701498	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1337	7630995	701486	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1338	7630984	701475	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1339	7630980	701454	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1340	7631003	701437	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1341	7631044	701437	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1342	7631075	701317	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1343	7630666	701866	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1344	7630663	701872	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1345	7630655	701880	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1346	7630551	701918	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1347	7630662	701904	11.35	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1348	7630765	701859	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1349	7630760	701850	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1350	7630734	701668	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1351	7630777	701616	4.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1352	7630490	701473	3.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1353	7630602	702070	9.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1354	7630507	702012	2.10	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1355	7630160	702393	2.75	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1356	7630037	702547	1.39	0.00	9.74	0.00	1.72	debris	-
Contact1357	7630014	702603	1.63	0.00	0.00	0.00	0.00	Piling	-
Contact1358	7630001	702615	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1359	7629982	702622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1360	7629976	702628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1361	7629968	702633	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1362	7629963	702645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1363	7629950	702618	0.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1364	7629962	702608	2.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1365	7629988	702590	3.89	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1366	7630017	702571	20.87	0.00	13.67	0.00	2.35	debris	-
Contact1367	7630030	702555	2.21	0.00	5.36	0.00	0.96	debris	-
Contact1368	7630078	702515	0.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1369	7630071	702507	3.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1370	7629482	703086	7.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1371	7629155	703212	8.72	0.00	26.11	0.00	14.35	debris	-
Contact1372	7629132	703330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1373	7629102	703353	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1374	7629019	703424	25.09	0.00	0.00	0.00	0.00	Dolphin	-
Contact1375	7629000	703439	12.21	0.00	0.00	0.00	0.00	Dolphin	-
Contact1376	7628933	703495	24.86	0.00	0.00	0.00	0.00	Dolphin	-
Contact1377	7628915	703509	6.91	0.00	0.00	0.00	0.00	Dolphin	-
Contact1378	7628783	703598	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1379	7628756	703645	30.15	0.00	0.00	0.00	0.00	Dolphin	-
Contact1380	7628552	703782	20.22	0.00	38.91	0.00	10.97	debris	-
Contact1381	7628599	703788	13.23	0.00	5.36	0.00	1.45	debris	-
Contact1382	7628574	703807	12.84	0.00	15.18	0.00	3.93	debris	-
Contact1383	7628331	703402	31.02	8.84	11.45	0.00	2.55	debris	-
Contact1384	7627897	703804	13.75	0.00	10.19	0.00	2.40	debris	-
Contact1385	7627849	703826	4.07	0.00	12.11	0.00	2.32	debris	-
Contact1386	7627880	703823	18.60	5.35	11.70	0.00	2.52	debris	-
Contact1387	7627683	704208	31.49	0.00	5.05	0.00	2.51	Log	-
Contact1388	7627712	704228	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1389	7627524	704113	1.07	0.00	12.12	0.00	2.26	debris	-
Contact1390	7627523	704116	2.01	0.00	8.41	0.00	1.53	debris	-
Contact1391	7627546	704102	7.10	0.00	3.20	0.00	0.58	debris	-
Contact1392	7627530	704120	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1393	7628613	703775	16.81	2.83	4.09	0.00	1.13	debris	-
Contact1394	7628873	703458	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1395	7628860	703441	2.36	0.00	8.38	0.00	5.59	debris	-
Contact1396	7629347	703154	6.53	0.00	0.00	0.00	0.00	Dolphin	-
Contact1397	7629365	703145	3.76	0.00	0.00	0.00	0.00	Piling	-
Contact1398	7629333	703162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1399	7629326	703294	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1400	7629338	703282	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1401	7629313	703230	2.49	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1402	7629288	703297	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1403	7629182	702754	4.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1404	7629617	702958	17.82	0.00	0.00	0.00	0.00	Dolphin	-
Contact1405	7629634	702944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1406	7629535	703029	31.61	0.00	0.00	0.00	0.00	debris	-
Contact1407	7629747	702846	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1408	7629755	702835	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1409	7629761	702821	29.55	0.00	0.00	0.00	0.00	Dolphin	-
Contact1410	7629786	702796	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact1411	7629803	702760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1412	7629827	702769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1413	7629825	702766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1414	7629817	702763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1415	7629810	702758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1416	7629848	702745	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1417	7629877	702732	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1418	7629893	702719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1419	7629961	702656	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1420	7630061	702547	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1421	7629828	702324	10.75	0.00	0.00	0.00	0.00	debris	-
Contact1422	7630279	702175	15.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1423	7630269	702197	5.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1424	7631171	701242	4.76	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1425	7626948	705835	184.85	44.26	20.39	0.00	5.29	wreck	-
Contact1426	7627109	705482	70.53	13.47	17.37	0.00	6.48	wreck	-
Contact1427	7626684	705776	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1428	7626677	705675	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1429	7626574	705806	3.18	0.00	11.86	0.00	2.06	debris	-
Contact1430	7626565	705802	1.76	0.00	8.11	0.00	1.37	debris	-
Contact1431	7626540	705828	0.95	0.00	3.95	0.00	0.64	debris	-
Contact1432	7626536	705827	3.19	0.00	0.00	0.00	0.00	debris	-
Contact1433	7626516	705826	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1434	7626490	705822	1.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1435	7626471	705818	8.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1436	7626839	705794	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact1437	7626849	705797	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1438	7626159	705833	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1439	7626169	705838	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1440	7626172	705843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1441	7626180	705847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1442	7626384	705788	1.83	3.76	0.00	0.00	1.67	debris	-
Contact1443	7626397	705785	1.59	4.80	0.00	0.00	0.00	Debris - NMH	-
Contact1444	7625604	705594	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact1445	7625852	705363	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1446	7625819	705360	12.21	3.28	0.00	0.00	0.00	Debris - NMH	-
Contact1447	7625699	705278	5.28	4.31	0.00	0.00	0.00	Debris - NMH	-
Contact1448	7626271	705295	7.79	5.97	0.00	0.00	0.00	Debris - NMH	-
Contact1449	7625960	705824	13.71	3.53	0.00	0.00	0.00	Debris - NMH	-
Contact1450	7626086	705827	10.79	2.62	0.00	0.00	0.00	Debris - NMH	-
Contact1451	7626112	705834	12.72	0.00	5.08	0.00	1.05	debris	-
Contact1452	7626319	705764	9.47	1.96	3.63	0.00	1.10	debris	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1453	7626370	705770	0.00	4.21	0.00	0.00	0.00	Debris - NMH	-
Contact1454	7626374	705683	0.73	5.99	0.00	0.00	0.00	Debris - NMH	-
Contact1455	7626465	705455	4.08	2.60	0.00	0.00	0.00	debris	-
Contact1456	7626365	705339	9.08	2.22	1.25	0.00	0.27	debris	-
Contact1457	7626976	705769	4.83	1.64	0.00	0.00	0.00	Debris - NMH	-
Contact1458	7626984	705775	0.12	0.00	7.71	0.00	4.49	debris	-
Contact1459	7627094	705627	19.72	4.44	7.72	0.00	2.34	debris	-
Contact1460	7627082	705621	0.00	0.00	0.00	0.00	0.00	debris	-
Contact1461	7627117	705612	3.94	0.00	8.99	0.00	2.19	debris	-
Contact1462	7627110	705628	4.13	3.36	7.85	0.00	2.19	debris	-
Contact1463	7627089	705728	0.38	0.00	22.92	0.00	14.15	Piling	-
Contact1464	7627157	705698	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1465	7627162	705694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1466	7627367	705678	23.40	1.06	4.58	0.00	0.68	debris	-
Contact1467	7627402	705671	22.07	5.81	5.66	0.00	0.64	debris	-
Contact1468	7626950	705555	18.45	5.24	5.39	0.00	0.69	debris	-
Contact1469	7626981	705571	4.85	0.00	9.26	0.00	1.20	debris	-
Contact1470	7626964	705587	4.01	2.61	0.00	0.00	0.00	Debris - NMH	-
Contact1471	7627083	704801	42.97	0.00	0.00	0.00	0.00	Piling	-
Contact1472	7627025	704947	28.03	2.31	3.81	0.00	1.23	debris	-
Contact1473	7627164	704712	30.08	0.00	4.41	0.00	2.07	debris	-
Contact1474	7632535	700833	46.78	19.79	0.00	0.00	0.00	Structure	-
Contact1475	7632602	700601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1476	7632652	700584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1477	7632702	700566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1478	7632747	700551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1479	7632799	700538	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1480	7632844	700521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1481	7632913	700557	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1482	7632894	700505	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1483	7632749	700581	21.18	0.00	0.00	0.00	0.00	debris	-
Contact1484	7632822	700563	1.06	0.00	17.30	0.00	7.22	Piling	Submerged
Contact1485	7632560	700612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1486	7632883	700559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1487	7633063	701350	39.51	0.00	6.68	0.00	2.70	debris	?
Contact1488	7633182	701288	3.91	0.00	8.81	0.00	2.56	debris	-
Contact1489	7633170	701288	4.85	0.00	10.72	0.00	2.65	debris	-
Contact1490	7633138	701201	27.38	0.00	18.78	0.00	3.12	debris	-
Contact1491	7633225	701158	37.18	0.00	3.08	0.00	0.49	debris	-
Contact1492	7633303	701153	6.68	0.00	2.16	0.00	0.34	debris	-
Contact1493	7633347	701141	6.34	0.00	0.00	0.00	0.00	debris	-
Contact1494	7632968	701346	6.10	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1495	7633070	701181	13.08	7.30	0.00	0.00	0.00	Debris - NMH	-
Contact1496	7633070	701189	6.42	2.02	0.00	0.00	0.00	Debris - NMH	-
Contact1497	7633088	701198	7.69	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1498	7633091	701219	11.25	2.92	10.25	0.00	1.82	debris	-
Contact1499	7633106	701321	4.23	0.00	1.71	0.00	0.56	debris	-
Contact1500	7632931	701302	3.67	1.71	0.00	0.00	0.00	Debris - NMH	-
Contact1501	7632924	701374	4.28	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1502	7632911	701376	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1503	7632968	701434	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1504	7633196	701356	3.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1505	7633206	701302	5.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1506	7633260	701257	0.00	0.00	3.09	0.00	0.73	debris	-
Contact1507	7633304	701265	3.81	0.00	5.28	0.00	1.29	debris	-
Contact1508	7633308	701259	3.26	0.00	5.28	0.00	1.23	debris	-
Contact1509	7633303	701251	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1510	7633319	701307	4.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1511	7633324	701337	3.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1512	7633364	701311	5.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1513	7633382	701336	4.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1514	7633393	701344	1.64	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1515	7633381	701230	2.66	0.00	1.59	0.00	0.30	debris	-
Contact1516	7633393	701252	2.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1517	7633286	701362	4.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1518	7633289	701350	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1519	7633197	701354	4.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1520	7633238	701501	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1521	7633232	701560	2.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1522	7633163	701515	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1523	7633097	701557	1.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1524	7633100	701545	3.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1525	7633065	701525	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1526	7633054	701534	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1527	7633045	701527	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1528	7633023	701539	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1529	7633035	701542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1530	7633054	701562	4.51	7.18	0.00	0.00	0.00	Debris - NMH	-
Contact1531	7633056	701569	1.97	1.32	0.00	0.00	0.00	Debris - NMH	-
Contact1532	7633059	701577	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1533	7633072	701618	8.09	3.26	0.00	0.00	0.00	Debris - NMH	-
Contact1534	7633075	701643	7.95	0.93	0.00	0.00	0.00	Debris - NMH	-
Contact1535	7633124	701640	5.35	2.55	3.57	0.00	0.91	debris	-
Contact1536	7633098	701614	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1537	7633120	701618	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1538	7633118	701626	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1539	7633123	701642	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1540	7633160	701639	8.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1541	7633174	701656	6.47	2.69	0.00	0.00	0.00	Debris - NMH	-
Contact1542	7633180	701653	7.80	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1543	7633195	701653	4.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1544	7633196	701659	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1545	7633222	701655	4.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1546	7633220	701663	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1547	7633304	701523	2.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1548	7633303	701526	2.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1549	7633315	701563	1.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1550	7633333	701579	5.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1551	7633337	701641	11.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1552	7633127	701740	9.24	3.30	0.00	0.00	0.00	Debris - NMH	-
Contact1553	7633131	701763	6.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1554	7633084	701685	5.41	5.28	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1555	7633053	701609	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1556	7633039	701581	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1557	7632927	701329	2.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1558	7632917	701313	2.66	0.00	1.09	0.00	0.25	debris	-
Contact1559	7632918	701306	4.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1560	7632993	701339	3.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1561	7632999	701333	4.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1562	7632987	701331	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1563	7632995	701323	3.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1564	7633062	701351	42.67	5.88	6.68	0.00	2.74	wreck	-
Contact1565	7633038	701365	2.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1566	7633045	701369	1.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1567	7633039	701335	5.21	2.28	0.00	0.00	0.00	Debris - NMH	-
Contact1568	7633051	701329	5.49	0.00	18.02	0.00	6.68	debris	-
Contact1569	7633063	701326	9.43	1.55	0.00	0.00	0.00	Debris - NMH	-
Contact1570	7633075	701300	8.77	3.35	0.00	0.00	0.00	Debris - NMH	-
Contact1571	7633063	701288	7.88	2.53	0.00	0.00	0.00	Debris - NMH	-
Contact1572	7633036	701295	4.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1573	7633028	701214	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1574	7633007	701204	1.42	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1575	7632878	701248	16.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1576	7632917	701243	12.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1577	7632954	701231	9.49	0.00	3.73	0.00	0.65	debris	-
Contact1578	7633011	701238	5.07	1.86	0.00	0.00	0.00	Debris - NMH	-
Contact1579	7633146	701163	6.74	0.00	0.00	0.00	0.00	debris	-
Contact1580	7633418	701222	3.12	0.00	10.13	0.00	2.02	debris	-
Contact1581	7633416	701194	1.63	1.59	0.00	0.00	0.00	Debris - NMH	-
Contact1582	7633426	701203	3.68	2.24	0.00	0.00	0.00	Debris - NMH	-
Contact1583	7633448	701221	2.94	0.00	0.00	0.00	0.00	unclassified	-
Contact1584	7633483	701194	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1585	7633472	701187	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1586	7633479	701199	2.35	0.00	2.79	0.00	0.53	debris	-
Contact1587	7633470	701178	1.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1588	7633561	701214	2.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1589	7633585	701175	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1590	7633597	701249	3.50	4.08	13.21	0.00	4.43	debris	-
Contact1591	7633627	701255	3.39	3.95	19.31	0.00	8.01	debris	-
Contact1592	7633571	701141	31.50	4.31	3.87	0.00	0.64	debris	-
Contact1593	7633546	701188	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1594	7633616	701339	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1595	7633660	701487	7.30	2.35	0.00	0.00	0.00	Debris - NMH	-
Contact1596	7633702	701552	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1597	7633580	701596	8.83	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1598	7633362	701610	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1599	7633341	701537	3.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1600	7633343	701528	2.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1601	7633434	701386	1.67	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1602	7633672	701439	1.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1603	7633756	701462	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1604	7633782	701484	6.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1605	7633784	701474	3.54	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1606	7633798	701444	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1607	7633842	701478	4.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1608	7633764	701169	18.06	3.05	15.04	0.00	4.07	debris	Scoured In
Contact1609	7633738	701133	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1610	7633738	701051	15.18	3.63	0.00	0.00	0.00	Debris - NMH	-
Contact1611	7633951	701116	4.26	2.33	2.90	0.00	1.17	debris	-
Contact1612	7633980	701385	39.84	0.00	0.00	0.00	0.00	Dolphin	-
Contact1613	7634067	701319	28.58	0.00	0.00	0.00	0.00	Dolphin	-
Contact1614	7634154	701252	29.81	0.00	0.00	0.00	0.00	Dolphin	-
Contact1615	7634202	701215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1616	7634226	701196	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1617	7634337	700981	4.63	1.31	1.66	0.00	0.85	debris	-
Contact1618	7634150	701027	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1619	7634121	700976	3.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1620	7634105	700970	2.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1621	7634137	701039	1.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1622	7634072	701022	0.54	5.38	0.00	0.00	0.00	Debris - NMH	-
Contact1623	7634062	701043	2.11	1.37	0.00	0.00	0.00	Debris - NMH	-
Contact1624	7633984	700996	7.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1625	7634038	701229	1.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1626	7634041	701223	2.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1627	7634047	701218	2.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1628	7634054	701238	2.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1629	7634050	701252	4.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1630	7634043	701249	3.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1631	7634049	701273	5.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1632	7634015	701259	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1633	7634022	701270	0.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1634	7634112	701190	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1635	7634123	701182	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1636	7634121	701179	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1637	7634137	701187	1.07	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1638	7634145	701195	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1639	7634133	701203	2.50	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1640	7634130	701195	3.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1641	7634134	701192	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1642	7634217	701109	4.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1643	7634226	701087	4.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1644	7634333	700996	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1645	7634342	701097	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1646	7634392	701053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1647	7634275	701164	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1648	7634424	701027	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1649	7633989	701099	2.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1650	7634008	701107	2.31	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1651	7634024	701106	1.15	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1652	7634008	701107	2.24	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1653	7634011	701138	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1654	7633909	701031	2.58	2.84	0.37	0.00	0.09	Debris - NMH	-
Contact1655	7633882	700949	1.84	0.00	0.00	0.00	0.00	unclassified	-
Contact1656	7633930	700969	1.26	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1657	7633942	701038	3.28	0.00	6.73	0.00	1.81	debris	-
Contact1658	7633937	701035	2.74	0.00	1.54	0.00	0.42	Debris - NMH	-
Contact1659	7633963	700975	6.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1660	7634006	700941	2.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1661	7633993	700952	2.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1662	7634131	700963	2.77	4.42	0.00	0.00	0.00	Debris - NMH	-
Contact1663	7634142	700972	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1664	7634681	700676	3.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1665	7634422	700571	4.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1666	7634387	700550	4.00	0.00	15.53	0.00	4.51	Debris - NMH	-
Contact1667	7634421	700554	5.15	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1668	7634414	700544	5.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1669	7634419	700537	4.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1670	7634442	700558	3.17	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1671	7634441	700537	3.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1672	7634475	700543	7.09	2.08	0.00	0.00	0.00	Debris - NMH	-
Contact1673	7634466	700525	6.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1674	7634453	700513	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1675	7634457	700499	6.38	0.00	9.98	0.00	2.77	debris	-
Contact1676	7634462	700484	5.39	0.00	3.77	0.00	0.89	unclassified	-
Contact1677	7634506	700465	3.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1678	7634497	700460	2.64	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1679	7634488	700461	3.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1680	7634506	700346	17.37	0.00	5.91	0.00	1.13	debris	-
Contact1681	7634461	700350	22.56	0.00	1.67	0.00	0.29	debris	-
Contact1682	7634541	700287	23.02	0.00	4.43	0.00	0.76	debris	-
Contact1683	7634858	700597	10.50	0.00	2.77	0.00	0.48	debris	-
Contact1684	7634840	700679	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1685	7634610	700284	1.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1686	7634590	700305	2.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1687	7634557	700331	3.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1688	7634464	700317	2.67	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1689	7634418	700422	2.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1690	7634443	700438	1.33	0.00	5.26	0.00	1.05	debris	-
Contact1691	7634368	700431	2.68	0.00	9.05	0.00	1.29	Debris - NMH	-
Contact1692	7634423	700485	1.67	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1693	7634430	700488	2.42	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1694	7634384	700502	3.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1695	7634358	700488	5.11	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1696	7634321	700466	5.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1697	7634331	700457	3.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1698	7634751	700193	23.41	4.44	6.33	0.00	1.42	debris	-
Contact1699	7635004	700240	7.03	0.00	7.53	0.00	5.70	debris	-
Contact1700	7635036	700363	4.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1701	7634919	700458	3.47	0.00	18.04	0.00	4.63	Debris - NMH	-
Contact1702	7634924	700441	3.29	0.00	10.34	0.00	3.21	debris	-
Contact1703	7634920	700518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1704	7634974	700496	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1705	7634984	700484	6.90	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1706	7635152	700419	5.41	0.00	2.02	0.00	0.50	Piling	-
Contact1707	7635083	700454	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1708	7634826	700146	9.62	0.00	10.31	0.00	1.90	debris	-
Contact1709	7634838	700140	6.17	0.00	2.07	0.00	0.41	debris	-
Contact1710	7634861	700141	0.00	0.00	2.44	0.00	0.50	debris	-
Contact1711	7634850	700098	7.39	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1712	7634852	700072	5.48	0.00	9.56	0.00	1.41	debris	-
Contact1713	7634871	700106	0.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1714	7634918	700129	3.98	0.00	6.67	0.00	1.35	debris	-
Contact1715	7635066	700130	5.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1716	7635184	700276	8.84	0.00	4.45	0.00	3.61	debris	-
Contact1717	7635100	700320	19.56	0.00	1.84	0.00	1.46	Log	-
Contact1718	7635118	700309	0.78	0.00	20.37	0.00	13.47	debris	-
Contact1719	7635130	700370	5.55	0.00	0.00	0.00	0.00	debris	-
Contact1720	7635168	700319	0.97	0.00	5.69	0.00	2.61	debris	-
Contact1721	7635224	700299	3.39	0.00	4.13	0.00	2.07	debris	-
Contact1722	7635233	700301	4.93	0.00	3.21	0.00	1.55	debris	-
Contact1723	7635205	700271	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1724	7635219	700280	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1725	7635217	700276	2.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1726	7635245	700265	2.43	0.00	0.00	0.00	0.00	debris	-
Contact1728	7635226	700272	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact1729	7635225	700174	1.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1730	7634967	700456	3.61	1.29	0.00	0.00	0.00	Debris - NMH	-
Contact1731	7634977	700455	4.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1732	7634918	700430	4.27	4.67	0.00	0.00	0.00	Debris - NMH	-
Contact1733	7634880	700507	4.65	0.00	7.11	0.00	1.63	debris	-
Contact1734	7634895	700504	4.29	0.00	3.76	0.00	0.87	debris	-
Contact1735	7634953	700085	0.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1736	7634963	700087	0.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1737	7634915	700086	3.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1738	7634945	700112	1.63	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1739	7634973	700083	1.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1740	7634972	700041	1.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1741	7634964	700031	1.04	0.00	22.20	0.00	3.18	debris	-
Contact1742	7634956	700025	2.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1743	7634965	700044	1.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1744	7635031	699965	2.10	2.92	2.94	0.00	0.40	debris	-
Contact1745	7635034	699974	6.17	4.06	8.65	0.00	1.18	debris	-
Contact1746	7635039	699987	5.97	1.47	0.00	0.00	0.00	Debris - NMH	-
Contact1747	7635043	699996	4.07	2.43	0.00	0.00	0.00	Debris - NMH	-
Contact1748	7635045	700011	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1749	7635051	700027	8.88	0.00	1.66	0.00	0.28	debris	-
Contact1750	7634698	700599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1751	7634595	700726	4.41	0.00	4.48	0.00	2.86	debris	-
Contact1752	7634522	700831	9.31	2.93	0.00	0.00	0.00	Debris - NMH	-
Contact1753	7634545	700838	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1754	7634564	700835	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1755	7634573	700783	1.34	0.00	4.07	0.00	1.63	debris	-
Contact1756	7634584	700792	2.11	0.00	11.48	0.00	4.10	debris	-
Contact1757	7634539	700764	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1758	7634530	700759	0.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1759	7634493	700963	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1760	7634492	700947	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1761	7635845	699881	42.54	0.00	0.00	0.00	0.00	Dolphin	-
Contact1762	7635872	699867	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1763	7635895	699843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1764	7635910	699830	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1765	7635934	699808	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1766	7635949	699796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1767	7635974	699775	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1768	7635972	699755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1769	7635974	699752	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1770	7635979	699764	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1771	7635987	699773	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1772	7635999	699785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1773	7636004	699790	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1774	7636012	699798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1775	7635983	699763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1776	7635991	699771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1777	7635997	699778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1778	7636001	699783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1779	7635998	699748	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1780	7635998	699742	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1781	7635994	699738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1782	7635998	699737	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1783	7635996	699733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1784	7636000	699730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1785	7636004	699731	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1786	7636009	699729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1787	7636009	699723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1788	7636015	699719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1789	7636019	699715	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1790	7636023	699713	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1791	7636032	699730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1792	7636029	699725	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1793	7636052	699696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1794	7636051	699692	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1795	7636056	699683	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1796	7636061	699679	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1797	7636113	699638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1798	7636120	699633	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1799	7636123	699635	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1800	7636138	699624	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1801	7636151	699614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1802	7636161	699608	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1803	7636156	699603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1804	7636159	699601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1805	7636159	699596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1806	7636167	699602	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1807	7636166	699598	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1808	7636168	699592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1809	7636172	699591	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1810	7636176	699588	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1811	7636174	699586	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1812	7636174	699581	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1813	7636178	699586	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1814	7636178	699583	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1815	7635929	699776	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1816	7636012	699363	38.63	1.85	12.21	0.00	3.27	debris	-
Contact1817	7636200	699570	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1818	7636198	699563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1819	7636202	699564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1820	7636201	699559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1821	7636208	699563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1822	7636210	699563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1823	7636211	699559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1824	7636208	699556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1825	7636217	699549	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1826	7636220	699552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1827	7636229	699545	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1828	7636226	699543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1829	7636229	699542	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1830	7636229	699537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1831	7636235	699539	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1832	7636233	699534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1833	7636239	699530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1834	7636243	699536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1835	7636246	699527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1836	7636244	699524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1837	7636256	699540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1838	7636255	699525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1839	7636250	699517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1840	7636253	699517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1841	7636258	699515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1842	7636261	699510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1843	7636270	699507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1844	7636276	699507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1845	7636277	699512	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1846	7636274	699502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1847	7636282	699505	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1848	7636280	699499	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1849	7636287	699500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1850	7636287	699490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1851	7636295	699485	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1852	7636298	699490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1853	7636300	699498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1854	7636302	699488	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1855	7636302	699494	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1856	7636300	699479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1857	7636303	699481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1858	7636306	699483	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1859	7636273	699399	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1860	7636349	699340	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1861	7636371	699447	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1862	7636372	699437	4.39	0.00	3.02	0.00	0.55	debris	-
Contact1863	7636382	699455	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1864	7636386	699449	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1865	7636389	699427	4.62	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1866	7636393	699405	3.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1867	7636407	699353	15.95	0.00	6.06	0.00	1.56	debris	-
Contact1868	7636465	699308	38.80	0.00	8.88	0.00	2.24	debris	-
Contact1869	7636110	699084	4.76	3.61	0.00	0.00	0.00	Debris - NMH	-
Contact1870	7636249	699007	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1871	7636490	699311	4.72	0.00	4.89	0.00	1.15	debris	-
Contact1872	7636438	699340	6.46	0.00	4.56	0.00	1.15	Debris - NMH	-
Contact1873	7636436	699328	2.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1874	7636501	699266	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1875	7636540	699290	3.26	0.00	0.00	0.00	0.00	debris	-
Contact1876	7636556	699302	4.20	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1877	7636574	699237	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1878	7636584	699239	4.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1879	7636603	699222	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1880	7636467	699019	6.30	5.29	13.79	0.00	3.39	debris	-
Contact1881	7636471	699103	11.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1882	7636737	699105	5.52	0.00	0.00	0.00	0.00	Piling	Submerged
Contact1883	7636776	699026	5.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1884	7636774	699063	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1885	7636770	699056	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1886	7636757	699040	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1887	7636724	699071	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1888	7636737	699051	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1889	7636736	699042	1.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1890	7636737	699034	3.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1891	7636729	699014	2.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1892	7636639	699086	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1893	7636661	699069	0.59	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1894	7636668	699050	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1895	7636517	698994	4.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1896	7636530	699040	6.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1897	7636355	698999	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1898	7636406	699057	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1899	7636538	699188	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1900	7636519	699231	2.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1901	7636496	699226	2.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1902	7636652	699157	0.94	0.00	35.40	0.00	6.69	Piling	-
Contact1903	7636637	699143	2.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1904	7636635	699148	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1905	7636615	699145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1906	7636613	699152	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1907	7636602	699153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1908	7636594	699161	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1909	7636599	699166	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1910	7636230	699064	2.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1911	7635987	699305	1.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1912	7635785	699490	29.38	10.58	0.00	0.00	0.00	Depression	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1913	7635734	699530	21.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1914	7635724	699456	4.28	0.00	4.99	0.00	0.73	debris	-
Contact1915	7635627	699585	5.24	0.00	6.03	0.00	1.01	debris	-
Contact1916	7635638	699690	0.77	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1917	7635619	699676	0.89	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1918	7635508	699644	2.76	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1919	7635613	699835	6.26	0.00	8.43	0.00	4.28	debris	-
Contact1920	7635570	699772	11.88	0.00	5.10	0.00	1.11	debris	-
Contact1921	7635503	699705	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1922	7635612	699786	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1923	7635624	699789	10.98	4.29	0.00	0.00	0.00	debris	-
Contact1924	7635588	699820	1.68	0.00	6.67	0.00	2.36	debris	-
Contact1925	7635572	699807	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1926	7635581	699811	6.13	0.00	9.03	0.00	2.40	debris	-
Contact1927	7635719	699907	11.67	0.00	1.57	0.00	1.05	debris	-
Contact1928	7635733	699888	5.01	0.00	9.00	0.00	5.35	debris	-
Contact1929	7635765	699853	2.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1930	7635324	700085	3.03	0.00	8.40	0.00	3.49	debris	-
Contact1931	7635376	700014	2.62	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1932	7635390	700100	4.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1933	7635256	700113	2.18	0.00	7.09	0.00	3.31	debris	-
Contact1934	7635267	700119	3.20	0.00	3.64	0.00	1.55	unclassified	-
Contact1935	7635259	700147	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1936	7635275	700154	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1937	7635280	700143	4.64	0.00	1.73	0.00	1.23	debris	-
Contact1938	7635290	700139	0.00	0.00	3.08	0.00	2.16	aluated & Dismiss	-
Contact1939	7635294	700157	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact1940	7635256	700164	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1941	7635139	700188	3.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1942	7635090	700114	4.07	0.00	6.25	0.00	1.94	debris	-
Contact1943	7634710	700153	12.50	0.00	1.30	0.00	0.22	debris	-
Contact1944	7634723	700160	5.08	0.00	0.00	0.00	0.00	debris	-
Contact1945	7634749	700141	7.22	0.00	16.21	0.00	2.75	debris	-
Contact1946	7634789	700150	6.15	0.00	6.01	0.00	1.23	debris	-
Contact1947	7634781	700199	6.27	0.00	6.16	0.00	1.58	debris	-
Contact1948	7634814	700155	4.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1949	7634788	700103	2.92	0.00	5.65	0.00	1.00	debris	-
Contact1950	7634781	700086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1951	7634603	700386	10.89	0.00	13.09	0.00	6.41	debris	-
Contact1952	7634547	700387	2.64	0.00	7.76	0.00	2.20	debris	-
Contact1953	7634590	700366	1.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1954	7634532	700314	7.21	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1955	7634477	700392	15.34	0.00	20.61	0.00	4.05	debris	-
Contact1956	7634496	700431	2.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1957	7634602	700476	6.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1958	7634427	700411	4.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1959	7634534	700539	5.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1960	7634735	700651	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1961	7634762	700615	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1962	7634778	700627	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1963	7634848	700580	3.65	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact1964	7634183	700767	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1965	7634207	700785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact1966	7634171	700776	4.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1967	7634271	700676	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact1968	7634232	700615	2.89	0.00	6.65	0.00	1.22	debris	-
Contact1969	7634210	700623	3.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1970	7634161	700829	6.03	0.00	3.50	0.00	0.75	debris	-
Contact1971	7634170	700817	3.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1972	7634128	700832	1.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1973	7634149	700907	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1974	7634145	700904	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact1975	7634151	700903	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1976	7634159	700893	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1977	7634028	700864	4.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1978	7634109	700902	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1979	7634116	700918	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1980	7634414	700898	3.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1981	7634413	700896	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1982	7634098	701230	12.47	0.00	4.41	0.00	1.72	debris	-
Contact1983	7634107	701210	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact1984	7633863	701371	61.94	0.00	9.54	0.00	5.08	debris	-
Contact1985	7633865	701354	2.32	0.00	2.09	0.00	1.47	debris	-
Contact1986	7633686	701133	7.36	0.00	7.84	0.00	1.80	debris	-
Contact1987	7633673	701123	6.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1988	7633686	701209	7.71	0.00	6.12	0.00	2.07	debris	-
Contact1989	7633737	701216	6.71	0.00	6.29	0.00	2.46	debris	-
Contact1990	7633228	701565	1.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1991	7633480	701681	5.89	0.00	0.00	0.00	0.00	unclassified	-
Contact1992	7633504	701668	3.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1993	7633515	701690	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1994	7633528	701473	3.93	0.00	3.19	0.00	2.28	debris	-
Contact1995	7633720	701209	16.49	0.00	3.64	0.00	1.36	Log	-
Contact1996	7633691	701103	3.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact1997	7633753	701123	2.50	0.00	6.28	0.00	1.43	debris	-
Contact1998	7633768	701167	12.25	0.00	0.00	0.00	0.00	Debris	-
Contact1999	7633970	701287	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact2000	7623065	707712	11.15	0.00	2.94	0.00	0.92	debris	-
Contact2000	7623065	707712	11.15	0.00	2.94	0.00	0.92	debris	-
Contact2002	7633976	701381	35.98	28.25	0.00	0.00	0.00	Dolphin	-
Contact2003	7634003	701357	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2005	7634228	700885	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2006	7634241	700867	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2007	7634571	700895	5.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2010	7634495	700924	5.02	4.32	0.00	0.00	0.00	Debris - NMH	-
Contact2011	7634364	700651	28.11	0.00	0.00	0.00	0.00	Log	-
Contact2012	7634298	700574	4.24	0.00	25.45	0.00	3.73	debris	-
Contact2013	7634295	700580	1.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2014	7634614	700417	4.94	0.00	4.81	0.00	2.73	debris	-
Contact2017	7634865	700468	2.10	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2018	7634866	700483	2.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2019	7634867	700492	5.06	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2021	7634978	700040	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2022	7634985	700072	1.79	0.00	17.63	0.00	4.03	debris	-
Contact2023	7635305	700072	3.05	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2026	7635476	699996	3.66	5.08	4.89	0.00	1.82	debris	-
Contact2028	7620664	710737	39.47	6.35	6.11	0.00	2.91	debris	-
Contact2029	7625738	706006	30.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2030	7625710	706005	26.31	0.00	4.04	0.00	1.00	debris	-
Contact2031	7625683	706026	26.98	5.22	8.48	0.00	1.96	debris	-
Contact2032	7625549	705736	2.23	0.00	35.30	0.00	13.48	Piling	-
Contact2033	7625455	705859	1.67	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2036	7625323	706148	14.22	0.00	4.85	0.00	2.30	debris	-
Contact2037	7625002	706283	2.26	0.00	35.17	0.00	53.75	Piling	-
Contact2038	7624985	706315	0.93	0.00	24.59	0.00	19.04	Piling	-
Contact2041	7624987	706351	3.35	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2042	7624992	706363	4.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2043	7624908	706159	2.86	0.00	10.41	0.00	4.32	debris	Proud
Contact2044	7624899	706161	3.67	0.00	4.25	0.00	1.83	debris	-
Contact2051	7625105	706221	1.82	0.00	0.00	0.00	0.00	debris	-
Contact2053	7625210	706005	27.21	0.00	0.00	0.00	0.00	Log	-
Contact2054	7624771	706482	1.48	0.00	13.52	0.00	5.80	debris	-
Contact2055	7624738	706521	7.77	0.00	6.94	0.00	2.31	debris	-
Contact2056	7624604	706580	23.46	0.00	3.93	0.00	1.45	debris	-
Contact2058	7624586	706575	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2059	7624574	706601	17.38	0.00	4.31	0.00	1.75	debris	-
Contact2060	7624556	706585	1.69	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2061	7624530	706602	1.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2062	7624505	706617	19.32	0.00	0.79	0.00	0.39	debris	-
Contact2066	7624444	706727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2067	7624465	706689	4.84	0.00	5.26	0.00	1.67	debris	-
Contact2068	7624456	706681	4.88	0.00	0.00	0.00	0.00	debris	-
Contact2069	7624469	706715	5.56	0.00	10.71	0.00	2.94	debris	-
Contact2070	7624341	706736	8.96	0.00	0.00	0.00	0.00	Piling	-
Contact2071	7624279	706797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2072	7624201	706856	25.35	0.00	0.00	0.00	0.00	Dolphin	-
Contact2073	7624223	706853	8.17	0.00	4.07	0.00	1.17	debris	-
Contact2074	7624259	706833	4.24	0.00	4.07	0.00	1.07	debris	-
Contact2075	7624242	706827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2076	7624272	706826	6.11	0.00	3.50	0.00	0.88	debris	-
Contact2077	7624112	706908	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2078	7623840	707078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2081	7624071	706931	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2082	7624018	706968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2083	7623669	706998	0.92	0.00	45.13	0.00	19.31	Piling	-
Contact2084	7623691	706946	21.18	31.02	0.00	0.00	0.00	Structure	?
Contact2085	7623703	706894	0.00	0.00	82.75	0.00	16.98	Piling	Submerged
Contact2086	7623762	706833	7.57	0.00	10.11	0.00	2.51	debris	-
Contact2087	7623780	706851	5.66	0.00	0.00	0.00	0.00	debris	-
Contact2088	7623793	706789	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2089	7623726	707096	0.85	0.00	28.70	0.00	64.67	Piling	-
Contact2090	7623753	707180	4.22	0.00	14.04	0.00	5.53	debris	-
Contact2091	7623736	707186	5.48	0.00	5.75	0.00	2.25	debris	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2092	7623744	707192	3.97	0.00	5.56	0.00	2.01	debris	-
Contact2093	7623735	707200	1.85	0.00	19.84	0.00	8.21	debris	-
Contact2094	7623732	707203	2.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2095	7623732	707210	2.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2096	7623786	707183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2097	7623796	707180	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2099	7623812	707170	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2100	7623821	707165	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2101	7623829	707162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2102	7623837	707161	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2103	7623850	707156	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2104	7623860	707155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2105	7623855	707150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2106	7623850	707151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2107	7623844	707152	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2108	7623838	707153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2109	7623840	707154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2110	7623843	707156	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2111	7623846	707158	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2112	7623847	707158	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2113	7623847	707155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2114	7623853	707151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2115	7623891	707139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2116	7623696	707196	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2117	7623696	707211	0.90	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2118	7623650	707184	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact2119	7623645	707203	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2120	7623682	707255	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2121	7623672	707254	2.44	0.00	13.88	0.00	5.56	debris	-
Contact2122	7623652	707241	3.54	0.00	1.78	0.00	0.78	debris	-
Contact2124	7623650	707285	4.87	0.00	19.96	0.00	7.47	Piling	-
Contact2125	7623630	707307	4.39	0.00	9.88	0.00	3.19	debris	-
Contact2127	7623549	707247	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2128	7623530	707264	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2129	7623525	707281	9.15	0.00	0.00	0.00	0.00	Piling	-
Contact2130	7623508	707285	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2131	7623502	707289	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2132	7623505	707299	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2133	7623477	707302	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2134	7623486	707313	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2135	7623480	707319	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2136	7623479	707313	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2137	7623468	707319	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2138	7623466	707327	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2139	7623458	707340	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2140	7623439	707347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2141	7623392	707351	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2142	7623385	707349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2143	7623376	707363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2144	7623363	707367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2145	7623358	707373	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2146	7623354	707375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2147	7623350	707380	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2148	7623346	707383	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2149	7623344	707385	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2150	7623342	707388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2151	7623340	707391	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2152	7623320	707411	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2153	7623344	707257	6.58	0.00	5.34	0.00	3.94	debris	-
Contact2158	7623443	707149	14.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2159	7623412	707182	6.34	0.00	1.77	0.00	0.98	debris	-
Contact2161	7623504	707143	1.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2162	7623530	707134	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2163	7623540	707066	14.17	0.00	3.56	0.00	1.63	debris	-
Contact2164	7623508	707041	24.07	0.00	3.17	0.00	1.01	debris	-
Contact2165	7623584	707075	3.75	0.00	0.00	0.00	0.00	debris	-
Contact2166	7623324	707446	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2167	7623282	707453	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2168	7623294	707464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2169	7623288	707469	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2170	7623287	707473	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2171	7623276	707469	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2172	7623280	707473	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2173	7623279	707482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2174	7623273	707479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2175	7623272	707482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2176	7623139	707593	20.62	0.00	0.00	0.00	0.00	Dolphin	-
Contact2177	7623091	707494	13.25	0.00	25.25	0.00	13.14	Piling	Submerged
Contact2178	7623073	707487	0.00	0.00	0.00	0.00	0.00	debris	-
Contact2179	7623165	707579	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2180	7623166	707572	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2181	7623173	707562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2182	7623176	707555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2183	7623182	707549	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2184	7623186	707543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2185	7623190	707540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2186	7623196	707543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2187	7623203	707537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2188	7623210	707529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2189	7623212	707526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2190	7623220	707520	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2191	7623223	707528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2192	7623226	707513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2193	7623233	707507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2194	7623248	707506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2195	7623261	707507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2196	7623271	707505	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2197	7623271	707497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2198	7623117	707481	7.98	0.00	4.48	0.00	3.17	debris	-
Contact2199	7623101	707441	0.73	0.00	15.37	0.00	6.29	debris	-
Contact2200	7622968	707748	32.12	0.00	0.00	0.00	0.00	Log	-
Contact2201	7622968	707746	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2202	7622963	707737	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2204	7623071	707714	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2205	7622994	707526	2.08	0.00	7.79	0.00	3.20	debris	-
Contact2206	7623001	707550	21.48	31.52	0.00	0.00	0.00	Structure	-
Contact2207	7623050	707506	56.84	69.16	0.00	0.00	0.00	Structure	-
Contact2208	7622881	707575	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2209	7623101	707632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2210	7623120	707617	0.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2211	7623218	707664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2212	7623211	707663	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2213	7622950	707799	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2214	7622973	707846	15.44	0.00	3.73	0.00	1.05	debris	-
Contact2215	7622962	707822	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2216	7622561	707639	44.00	0.00	9.10	0.00	1.78	Log	-
Contact2217	7622537	707700	43.10	0.00	2.77	0.00	0.60	unclassified	-
Contact2218	7620814	710594	60.93	0.00	0.00	0.00	0.00	Dolphin	-
Contact2219	7620796	710621	26.81	0.00	0.00	0.00	0.00	Dolphin	-
Contact2220	7620799	710729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2221	7620831	710058	0.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2222	7620952	710282	3.07	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2223	7621016	710259	9.36	0.00	3.03	0.00	1.16	debris	-
Contact2225	7621219	709994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2226	7621126	710153	35.42	0.00	0.00	0.00	0.00	Dolphin	-
Contact2227	7621273	709918	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2228	7620993	709960	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2229	7620989	709966	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2230	7620824	709841	21.84	0.00	3.12	0.00	0.59	debris	-
Contact2231	7620912	709955	20.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2232	7620918	709964	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2233	7620950	709883	22.78	0.00	0.00	0.00	0.00	debris	-
Contact2234	7621135	709777	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2235	7621354	709784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2236	7621439	709643	3.00	0.00	5.74	0.00	2.18	debris	-
Contact2237	7621386	709688	1.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2238	7621402	709698	0.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2239	7621370	709723	4.68	0.00	9.79	0.00	3.78	debris	-
Contact2240	7621480	709576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2241	7621463	709618	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2242	7621513	709551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2243	7621527	709531	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2244	7621541	709506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2245	7621537	709516	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2246	7621547	709469	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2247	7621438	709306	25.05	0.00	6.81	0.00	4.53	debris	-
Contact2248	7621595	709334	4.04	0.00	10.58	0.00	4.94	debris	-
Contact2249	7621572	709348	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2250	7621628	709349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2251	7621568	709439	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2252	7621576	709432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2253	7621552	709461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2254	7621546	709481	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2255	7621607	709283	0.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2256	7621657	709317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2257	7621688	709279	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2258	7621675	709281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2259	7621694	709253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2260	7621714	709162	26.08	0.00	0.00	0.00	0.00	Dolphin	-
Contact2261	7621529	709119	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2262	7621589	709038	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2263	7621876	708934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2264	7621939	708851	23.69	0.00	0.00	0.00	0.00	Dolphin	-
Contact2265	7621895	709004	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2266	7621881	709025	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2267	7621862	709049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2268	7621792	709053	29.91	0.00	0.00	0.00	0.00	Dolphin	-
Contact2269	7621946	708868	80.94	15.62	11.50	0.00	5.03	wreck	-
Contact2270	7621995	708843	10.81	21.12	10.76	0.00	2.93	wreck	-
Contact2271	7622003	708751	42.08	0.00	0.00	0.00	0.00	Dolphin	-
Contact2272	7622115	708598	17.26	0.00	0.00	0.00	0.00	Dolphin	-
Contact2273	7622078	708660	66.84	28.11	0.00	0.00	0.00	Structure	-
Contact2274	7622127	708770	147.60	44.77	0.00	0.00	0.00	Structure	-
Contact2275	7622181	708604	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2276	7622205	708578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2277	7622189	708502	29.63	0.00	0.00	0.00	0.00	Dolphin	-
Contact2278	7622418	708287	28.45	42.39	0.00	0.00	0.00	Structure	-
Contact2279	7622325	708397	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2280	7622340	708413	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2281	7622363	708442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2282	7622330	708501	0.98	0.00	30.05	0.00	12.98	Piling	Submerged
Contact2283	7622605	708102	8.19	0.00	8.21	0.00	6.14	debris	-
Contact2284	7622614	708161	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2285	7622556	708216	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2286	7622583	708199	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2287	7623013	707723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2288	7623019	707691	3.46	0.00	12.59	0.00	7.28	Piling	Submerged
Contact2289	7623173	707571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2290	7622821	707996	3.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2291	7622767	708024	6.47	0.00	10.35	0.00	4.17	debris	-
Contact2292	7622765	708034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2293	7622766	708021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2294	7622609	708236	119.51	32.31	0.00	0.00	0.00	Structure	-
Contact2295	7622582	708288	114.24	52.40	0.00	0.00	0.00	Structure	-
Contact2296	7622493	708213	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2297	7622419	708329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2298	7622768	708088	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2299	7622708	708115	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2300	7623043	707494	36.37	89.89	0.00	0.00	0.00	Structure	-
Contact2301	7622913	707612	51.94	74.03	0.00	0.00	0.00	debris	zome
Contact2302	7622996	707509	4.20	0.00	2.92	0.00	1.15	debris	-
Contact2303	7622560	707902	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2304	7622247	708473	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2305	7619917	711915	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2306	7619970	711900	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2307	7619871	711891	2.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2308	7619917	711998	2.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2309	7619627	711790	1.29	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2310	7620039	710943	11.00	11.94	44.10	0.00	13.71	debris	-
Contact2311	7620051	710927	8.17	0.00	34.84	0.00	11.23	debris	-
Contact2312	7620746	710841	40.71	0.00	3.35	0.00	0.83	debris	-
Contact2313	7620386	710529	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2314	7620422	710529	8.44	0.00	4.13	0.00	1.61	debris	-
Contact2315	7620367	710662	33.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2316	7620916	710445	33.71	38.67	0.00	0.00	0.00	Dolphin	-
Contact2317	7620896	710478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2318	7620892	710483	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2319	7620887	710486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2320	7620880	710496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2321	7620874	710504	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2322	7620870	710506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2323	7620867	710510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2324	7620845	710534	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2325	7620843	710542	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2326	7620835	710554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2327	7620830	710566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2328	7620828	710572	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2329	7620467	711187	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2330	7620475	711179	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2331	7620483	711164	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2332	7620482	711159	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2333	7620480	711154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2334	7620483	711151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2335	7620487	711149	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2336	7620495	711145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2337	7620499	711140	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2338	7620500	711130	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2339	7620497	711126	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2340	7620496	711122	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2341	7620496	711117	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2342	7620502	711117	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2343	7620507	711120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2344	7620513	711122	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2345	7620517	711120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2346	7620512	711113	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2347	7620510	711107	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2348	7620507	711104	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2349	7620507	711097	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2350	7620509	711095	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2351	7620516	711090	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2352	7620525	711085	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2353	7620532	711077	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2354	7620530	711073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2355	7620531	711067	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2356	7620531	711063	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2357	7620531	711061	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2358	7620535	711055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2359	7620542	711051	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2360	7620550	711042	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2361	7620554	711022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2362	7620557	711016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2363	7620557	711009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2364	7620566	711007	37.53	0.00	0.00	0.00	0.00	Dolphin	-
Contact2365	7620574	710990	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2366	7620792	710740	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2367	7621038	710315	40.56	0.00	0.00	0.00	0.00	Dolphin	-
Contact2368	7621573	708686	41.20	0.00	21.11	0.00	4.02	debris	-
Contact2369	7622470	708047	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact2370	7624766	706498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2371	7620920	710435	43.00	33.13	0.00	0.00	0.00	Dolphin	-
Contact2372	7620906	710462	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2373	7620895	710477	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2374	7620879	710491	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2375	7620868	710504	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2376	7620864	710509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2377	7620849	710523	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2378	7620843	710535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2379	7620838	710547	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2380	7620831	710558	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2381	7620811	710591	54.68	55.88	0.00	0.00	0.00	Dolphin	-
Contact2382	7620819	710704	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2383	7620811	710711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2384	7620791	710729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2385	7620784	710745	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2386	7620566	711003	51.46	41.09	0.00	0.00	0.00	Dolphin	-
Contact2387	7620546	711043	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2388	7620540	711055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2389	7620532	711067	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2390	7620522	711083	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2391	7620515	711094	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2392	7620511	711109	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2393	7620507	711119	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2394	7620499	711135	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2395	7620493	711150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2396	7620487	711163	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2397	7620474	711194	42.57	36.84	0.00	0.00	0.00	Dolphin	-
Contact2398	7620437	711278	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2399	7620407	711346	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2400	7620359	711438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2401	7620365	711442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2402	7620338	711479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2403	7619818	712428	51.69	45.29	0.00	0.00	0.00	Dolphin	-
Contact2404	7619785	712520	38.20	47.66	0.00	0.00	0.00	Dolphin	-
Contact2405	7619696	712777	54.80	54.74	0.00	0.00	0.00	Dolphin	-
Contact2406	7619650	712824	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2407	7619641	712958	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2408	7619645	712954	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2409	7619648	712950	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2410	7619637	712968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2411	7619635	712971	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2412	7619634	712974	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2413	7619633	712976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2414	7619629	712984	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2415	7619627	712987	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact2416	7619608	713032	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2417	7619605	713036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2418	7619599	713058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2419	7619596	713062	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2420	7619594	713069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2421	7619595	713072	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2422	7619590	713094	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2423	7619600	713104	0.00	0.00	0.00	0.00	0.00	debris	-
Contact2424	7619644	713166	35.37	0.00	0.00	0.00	0.00	debris	-
Contact2425	7619705	713300	4.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2426	7619604	713382	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2427	7619298	713702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2428	7619364	713849	20.26	2.27	0.00	0.00	0.00	Debris - NMH	-
Contact2429	7619337	713900	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2430	7619265	713894	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2431	7619266	713957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2432	7619034	714251	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2433	7618905	714664	3.52	0.00	2.65	0.00	0.87	debris	-
Contact2434	7618812	714716	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2435	7618810	714728	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2436	7618805	714738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2437	7618801	714747	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2438	7618798	714753	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2439	7618796	714761	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2440	7618791	714767	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2441	7618787	714784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2442	7618783	714794	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2443	7618781	714800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2444	7618774	714811	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2445	7618769	714814	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2446	7618761	714823	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2447	7618760	714831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2448	7618756	714840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2449	7618751	714847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2450	7618747	714855	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2451	7618729	714856	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2452	7618720	714876	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2453	7618715	714889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2454	7618706	714906	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2455	7618697	714928	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2456	7618689	714944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2457	7618684	714954	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2458	7618681	714963	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2459	7618671	714986	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2460	7618663	715005	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2461	7618656	715018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2462	7618649	715038	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2463	7618644	715051	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2464	7618653	715071	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2465	7618632	715069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2466	7618623	715084	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2467	7618620	715088	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2468	7618614	715098	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2469	7618609	715108	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2470	7618600	715132	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2471	7618592	715153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2472	7618586	715171	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2473	7618576	715184	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2474	7618566	715212	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2475	7618563	715227	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2476	7618553	715242	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2477	7618543	715263	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2478	7618537	715274	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2479	7618531	715288	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2480	7618525	715301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2481	7618517	715329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2482	7618564	715096	24.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2483	7618486	715377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2484	7618481	715402	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2485	7618473	715437	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2486	7618460	715469	19.06	23.69	0.00	0.00	0.00	Dolphin	-
Contact2487	7618457	715509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2488	7618524	715514	109.37	41.64	0.00	0.00	0.00	Structure	-
Contact2489	7618450	715545	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2490	7618452	715580	23.34	0.00	0.00	0.00	0.00	Dolphin	-
Contact2491	7618459	715634	114.53	32.39	0.00	0.00	0.00	Structure	-
Contact2492	7618446	715610	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2493	7618382	715643	19.28	14.57	0.00	0.00	0.00	Dolphin	-
Contact2494	7618371	715709	76.78	29.08	0.00	0.00	0.00	Dolphin	-
Contact2495	7618393	715763	133.05	33.94	0.00	0.00	0.00	Structure	-
Contact2496	7618349	715781	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2497	7618325	715815	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2498	7618296	715852	41.85	21.10	0.00	0.00	0.00	Dolphin	-
Contact2499	7618352	715899	124.34	32.14	0.00	0.00	0.00	Structure	-
Contact2500	7618304	716002	110.65	22.70	0.00	0.00	0.00	Structure	-
Contact2501	7618263	716126	115.63	28.57	0.00	0.00	0.00	Structure	-
Contact2502	7618224	716095	34.64	29.34	0.00	0.00	0.00	Dolphin	-
Contact2503	7618201	716248	121.18	33.93	0.00	0.00	0.00	Structure	-
Contact2504	7618123	716319	25.54	26.17	0.00	0.00	0.00	Dolphin	-
Contact2505	7618101	716365	21.98	21.44	0.00	0.00	0.00	Dolphin	-
Contact2506	7618138	716369	101.64	34.34	0.00	0.00	0.00	Structure	-
Contact2507	7618089	716392	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2508	7618082	716497	115.39	25.67	0.00	0.00	0.00	Structure	-
Contact2509	7618028	716545	29.00	26.29	0.00	0.00	0.00	Dolphin	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2510	7618021	716614	98.60	26.49	0.00	0.00	0.00	Structure	-
Contact2511	7618020	716689	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2512	7617941	716722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2513	7617967	716748	0.00	32.26	0.00	0.00	0.00	Structure	-
Contact2514	7617944	717012	284.69	90.56	0.00	0.00	0.00	Structure	-
Contact2515	7617726	717262	2.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2516	7617649	717234	0.72	0.00	2.29	0.00	0.24	debris	-
Contact2517	7617649	717147	2.75	0.00	57.17	0.00	3.87	debris	-
Contact2518	7617597	717631	35.19	35.45	0.00	0.00	0.00	Dolphin	-
Contact2519	7617546	717693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2520	7617477	717762	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2521	7617535	717787	3.08	0.00	1.79	0.00	0.81	debris	-
Contact2522	7617525	717750	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2523	7617665	717644	5.27	0.00	1.60	0.00	0.71	debris	-
Contact2524	7617699	717675	2.83	0.00	0.00	0.00	0.00	debris	-
Contact2525	7617700	717545	41.62	17.69	41.13	0.00	16.92	debris	-
Contact2526	7618161	717108	6.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2527	7618124	717117	6.61	0.00	3.16	0.00	0.45	debris	-
Contact2528	7618039	717128	4.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2529	7618033	717112	0.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2530	7618057	717179	3.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2531	7617968	717157	0.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2532	7617709	717073	17.37	0.00	7.96	0.00	1.89	debris	-
Contact2533	7617944	716953	2.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2534	7617934	716947	2.33	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2535	7617762	716953	21.38	11.39	4.66	0.00	1.45	debris	-
Contact2536	7617744	716991	35.23	10.29	5.99	0.00	2.06	debris	-
Contact2537	7618063	716533	28.12	0.00	21.16	0.00	6.29	debris	-
Contact2538	7618266	716230	8.12	3.01	6.42	0.00	1.23	debris	-
Contact2539	7617926	716150	6.85	1.98	3.61	0.00	1.11	debris	-
Contact2540	7617847	716160	10.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2541	7617891	716269	2.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2542	7617886	716272	1.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2543	7617899	716310	3.92	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2544	7617915	716315	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2545	7617991	715715	6.02	0.00	0.00	0.00	3.20	Debris - NMH	-
Contact2546	7618342	715969	2.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2547	7618364	715813	3.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2548	7618434	715690	3.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2549	7618280	715313	1.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2550	7618220	715285	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2551	7618211	715283	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2552	7618188	715285	4.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2553	7618173	715271	0.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2554	7618169	715230	3.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2555	7618157	715392	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2556	7618248	715438	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2557	7618237	715468	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2558	7618506	714785	2.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2559	7618564	714714	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2560	7619011	713865	18.54	2.33	33.85	0.00	6.34	debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2561	7619123	713801	16.84	0.00	3.63	0.00	1.19	debris	-
Contact2562	7618933	713872	1.83	0.00	0.00	0.00	0.00	debris	-
Contact2563	7618943	713861	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2564	7618969	713864	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2565	7618978	713827	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2566	7618940	713803	2.39	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2567	7619021	713717	6.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2568	7619294	713700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2569	7618982	713688	0.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2570	7618981	713672	7.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2571	7619399	713512	1.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2572	7619479	713534	1.42	2.43	0.00	0.00	0.00	Debris - NMH	-
Contact2573	7619532	712874	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2574	7619651	712287	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2575	7619634	712296	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2576	7619719	712248	0.92	7.13	0.00	0.00	0.00	Debris - NMH	-
Contact2577	7620276	711066	8.22	0.00	38.73	0.00	12.19	Piling	Submerged
Contact2578	7620198	710970	2.01	10.13	14.78	0.00	2.20	debris	-
Contact2579	7620408	711019	6.58	4.71	0.00	0.00	0.00	Debris - NMH	-
Contact2580	7620345	711031	9.51	9.12	81.89	0.00	92.86	Piling	Scoured In
Contact2581	7620217	710973	7.90	0.00	5.65	0.00	0.94	debris	-
Contact2582	7620216	710983	8.02	0.00	6.04	0.00	0.98	debris	-
Contact2583	7620213	710959	9.54	0.00	0.00	0.00	4.00	Debris - NMH	-
Contact2584	7620346	710798	10.00	6.54	0.00	0.00	0.00	debris	-
Contact2585	7620400	710644	36.67	1.87	3.92	0.00	1.26	Log	-
Contact2586	7620421	710685	3.97	5.67	3.11	0.00	1.37	debris	-
Contact2587	7617920	716776	32.85	30.73	0.00	0.00	0.00	Dolphin	-
Contact2588	7619732	717242	13.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2589	7619691	717235	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2590	7619706	717246	0.63	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2591	7619302	717221	15.91	11.32	0.00	0.00	0.00	Debris - NMH	-
Contact2592	7619327	717203	48.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2593	7619129	717180	17.54	4.15	8.42	0.00	1.34	debris	-
Contact2594	7619101	717171	12.45	9.19	8.83	0.00	1.16	debris	-
Contact2595	7618954	717223	8.54	0.00	3.95	0.00	0.74	debris	-
Contact2596	7618781	717290	12.88	0.00	47.75	0.00	11.33	Piling	-
Contact2597	7618760	717292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2598	7618749	717291	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2599	7618727	717282	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2600	7618710	717283	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2601	7618702	717294	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2602	7618684	717285	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2603	7618670	717286	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2604	7618653	717283	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2605	7618381	717224	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2606	7618371	717237	3.13	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2607	7618227	717299	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2608	7618214	717302	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2609	7618201	717291	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2610	7618194	717294	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2611	7618197	717283	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2612	7618189	717292	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2613	7618189	717282	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2614	7618166	717272	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2615	7618150	717284	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2616	7618145	717280	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2617	7618083	717277	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2618	7619027	717256	1.79	5.29	58.68	0.00	9.47	Piling	-
Contact2619	7619073	717263	1.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2620	7619067	717151	1.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2621	7619097	717152	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2622	7619112	717154	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2623	7619232	717120	3.09	0.00	12.79	0.00	1.16	debris	-
Contact2624	7619598	717062	6.92	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2625	7640466	693178	35.99	0.00	4.11	0.00	1.05	Log	-
Contact2626	7640103	692985	27.79	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact2627	7640076	692870	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact2628	7640471	692767	49.02	9.34	21.53	0.00	11.11	debris	-
Contact2629	7640583	692867	12.39	0.00	2.36	0.00	1.64	debris	-
Contact2630	7640680	692976	7.95	0.00	1.29	0.00	0.31	debris	-
Contact2631	7640925	692631	12.19	5.90	39.31	0.00	9.18	debris	-
Contact2632	7640755	692703	3.05	0.00	1.94	0.00	1.08	debris	-
Contact2633	7640991	692525	2.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2634	7641067	692565	29.23	0.00	2.41	0.00	0.49	debris	-
Contact2635	7641143	692415	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact2636	7641159	692438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2637	7641194	692403	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2638	7641217	692375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2639	7641260	692325	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2640	7641272	692292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2641	7641197	692231	1.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2642	7641621	691735	23.45	8.35	0.00	0.00	0.00	debris	-
Contact2643	7641305	691555	16.19	0.00	5.36	0.00	1.52	debris	-
Contact2644	7641404	691316	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact2645	7641818	691584	0.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2646	7641831	691593	0.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2647	7641818	691578	1.71	0.00	0.00	0.00	0.00	debris	-
Contact2648	7641859	691573	1.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2649	7641743	691745	31.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2650	7641654	691699	2.10	2.11	0.00	0.00	0.00	Debris - NMH	-
Contact2651	7641675	691681	1.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2652	7642049	691294	25.88	0.00	39.23	0.00	8.38	debris	Proud
Contact2653	7642075	691126	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2654	7641753	691169	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2655	7641938	691312	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact2656	7641885	691284	3.17	0.00	1.92	0.00	1.26	debris	-
Contact2657	7642067	690577	29.48	0.00	6.50	0.00	2.16	Log	-
Contact2658	7642152	690604	4.24	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2659	7642627	690548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2660	7643425	689798	31.24	0.00	10.13	0.00	3.26	Anchor Drag	-
Contact2661	7643386	689836	2.83	0.00	6.50	0.00	2.53	debris	-
Contact2662	7643301	689813	0.00	0.00	2.25	0.00	1.64	Debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2663	7642368	690685	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact2664	7642331	690719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2665	7642388	690663	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact2666	7642415	690636	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2667	7642437	690612	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact2668	7642454	690594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2669	7642471	690576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2670	7642501	690543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2671	7642533	690515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2672	7642551	690493	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2673	7642566	690472	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2674	7642583	690457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2675	7642591	690441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2676	7644137	689021	57.69	0.00	2.99	0.00	1.23	debris	-
Contact2677	7643993	689307	31.39	0.00	2.98	0.00	0.76	Log	-
Contact2678	7643933	689328	81.87	34.89	8.57	0.00	2.39	Structure	?
Contact2679	7643893	689365	27.67	33.12	12.69	0.00	3.48	Structure	?
Contact2680	7637375	694407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2681	7637359	694417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2682	7637350	694426	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2683	7637336	694432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2684	7637328	694439	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2685	7637306	694447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2686	7637309	694450	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2687	7637297	694459	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2688	7637286	694462	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2689	7637279	694466	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2690	7637274	694471	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2691	7637259	694478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2692	7637256	694481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2693	7637251	694484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2694	7637238	694490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2695	7637233	694494	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2696	7637224	694498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2697	7637217	694501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2698	7637206	694507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2699	7637201	694509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2700	7637196	694513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2701	7637187	694519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2702	7637180	694524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2703	7637174	694527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2704	7637166	694531	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2705	7637157	694537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2706	7637134	694554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2707	7637124	694558	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2708	7637118	694564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2709	7637113	694567	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2710	7637105	694571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2711	7637100	694573	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2712	7637094	694578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2713	7637086	694583	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2714	7637081	694585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2715	7637075	694588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2716	7637056	694601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2717	7637052	694603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2718	7637048	694603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2719	7637045	694607	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2720	7637036	694611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2721	7637027	694617	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2722	7637023	694619	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2723	7637001	694634	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2724	7636997	694639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2725	7636991	694640	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2726	7636988	694641	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2727	7636985	694644	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2728	7636977	694648	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2729	7636997	694638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2730	7636992	694639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2731	7636989	694642	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2732	7636985	694643	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2733	7636983	694645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2734	7636980	694646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2735	7636978	694651	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2736	7636952	694664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2737	7636943	694660	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2738	7636941	694672	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2739	7636936	694674	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2740	7636929	694677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2741	7636923	694681	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2742	7636919	694682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2743	7636900	694697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2744	7636898	694697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2745	7636895	694699	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2746	7636891	694701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2747	7636888	694703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2748	7636883	694703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2749	7636877	694707	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2750	7636871	694709	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2751	7636863	694716	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2752	7636852	694727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2753	7636848	694728	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2754	7636842	694729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2755	7636832	694737	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2756	7636825	694739	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2757	7636822	694741	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2758	7636815	694745	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2759	7636812	694747	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2760	7636798	694757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2761	7636792	694757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2762	7636790	694762	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2763	7636775	694771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2764	7636771	694774	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2765	7636769	694777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2766	7636765	694779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2767	7636760	694781	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2768	7636756	694783	0.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2769	7636743	694789	2.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact2770	7636736	694794	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2771	7636716	694806	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2772	7636718	694806	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2773	7636713	694805	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2774	7636712	694812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2775	7636707	694812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2776	7636695	694818	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2777	7636687	694824	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2778	7636684	694826	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2779	7636681	694829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2780	7636665	694838	1.00	0.00	1.47	0.00	0.51	debris	-
Contact2781	7636640	694852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2782	7636634	694861	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2783	7636628	694863	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2784	7636624	694866	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2785	7636617	694870	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2786	7636600	694882	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2787	7636593	694884	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2788	7636559	694906	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2789	7636549	694913	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2790	7636543	694917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2791	7636485	694953	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2792	7636477	694957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2793	7636473	694961	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2794	7636466	694965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2795	7636460	694968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2796	7636457	694969	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2797	7636451	694976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2798	7636445	694977	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2799	7636440	694978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2800	7636434	694984	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2801	7636429	694986	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2802	7636424	694989	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2803	7636420	694993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2804	7636415	694994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2805	7636411	694996	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2806	7636405	694999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2807	7636401	695004	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2808	7636395	695006	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2809	7636386	695012	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2810	7636382	695014	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2811	7636377	695017	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2812	7636372	695021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2813	7636368	695023	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2814	7636360	695028	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2815	7636357	695030	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2816	7636352	695033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2817	7636350	695036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2818	7636345	695037	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2819	7636331	695030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2820	7636327	695033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2821	7636325	695036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2822	7636328	695047	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2823	7636325	695050	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2824	7636319	695053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2825	7636316	695057	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2826	7636314	695058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2827	7636310	695059	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2828	7636308	695060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2829	7636305	695063	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2830	7636301	695065	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2831	7636294	695070	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2832	7636290	695072	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2833	7636285	695075	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2834	7636281	695078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2835	7636279	695079	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2836	7636276	695083	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2837	7636272	695085	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2838	7636269	695086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2839	7636267	695089	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2840	7636261	695090	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2841	7636258	695093	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2842	7636250	695097	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2843	7636247	695099	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2844	7636241	695103	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2845	7636240	695104	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2846	7636235	695105	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2847	7636233	695106	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2848	7636229	695108	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2849	7636225	695112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2850	7636221	695113	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2851	7636218	695115	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2852	7636215	695117	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2853	7636210	695120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2854	7636210	695118	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2855	7636199	695125	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2856	7636189	695133	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2857	7636186	695135	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2858	7636175	695138	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2859	7636172	695142	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2860	7636167	695145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2861	7636164	695147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2862	7636158	695150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2863	7636155	695151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2864	7636152	695152	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2865	7636148	695156	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2866	7636146	695157	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2867	7636141	695160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2868	7636137	695164	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2869	7636130	695169	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2870	7636127	695170	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2871	7636123	695172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2872	7636119	695175	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2873	7636117	695176	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2874	7636114	695177	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2875	7636113	695178	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2876	7636107	695181	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2877	7636104	695182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2878	7636100	695186	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2879	7636097	695188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2880	7636090	695192	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2881	7636088	695194	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2882	7636086	695195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2883	7636081	695199	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2884	7636074	695204	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2885	7636070	695206	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2886	7636059	695212	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2887	7636054	695215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2888	7636052	695216	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2889	7636050	695216	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2890	7636047	695218	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2891	7636038	695223	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2892	7636034	695225	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2893	7636018	695235	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2894	7636012	695240	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2895	7636008	695242	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2896	7636004	695243	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2897	7635998	695247	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2898	7635993	695249	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2899	7635988	695251	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2900	7635986	695254	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2901	7635982	695259	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2902	7635977	695259	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2903	7635973	695263	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2904	7635968	695265	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2905	7635962	695269	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2906	7635960	695270	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2907	7635956	695272	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2908	7635953	695275	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2909	7635950	695276	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2910	7635948	695279	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2911	7635944	695280	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2912	7635940	695281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2913	7635937	695285	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2914	7635934	695287	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2915	7635931	695289	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2916	7635926	695291	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2917	7635921	695295	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2918	7635918	695297	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2919	7635912	695300	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2920	7635908	695303	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2921	7635905	695304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2922	7635898	695310	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2923	7635891	695313	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2924	7635888	695315	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2925	7635882	695317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2926	7635878	695320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2927	7635869	695313	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2928	7635863	695316	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2929	7635866	695328	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2930	7635859	695333	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2931	7635855	695334	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2932	7635850	695336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2933	7635847	695338	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2934	7635844	695341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2935	7635841	695343	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2936	7635827	695343	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2937	7635820	695346	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2938	7635816	695350	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2939	7635812	695354	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2940	7635810	695362	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2941	7635807	695365	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2942	7635804	695365	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2943	7635800	695367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2944	7635796	695371	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2945	7635793	695372	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2946	7635790	695374	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2947	7635787	695375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2948	7635781	695378	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2949	7635776	695382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2950	7635772	695386	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2951	7635768	695388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2952	7635765	695389	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2953	7635761	695392	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2954	7635759	695395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2955	7635753	695397	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2956	7635746	695403	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2957	7635744	695404	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2958	7635741	695406	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2959	7635739	695408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2960	7635733	695412	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2961	7635724	695415	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2962	7635712	695417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2963	7635712	695422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2964	7635709	695424	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2965	7635706	695425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2966	7635702	695429	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2967	7635696	695431	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2968	7635693	695433	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact2969	7635690	695436	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2970	7635687	695438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2971	7635682	695442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2972	7635679	695442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2973	7635675	695446	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2974	7635672	695447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2975	7635670	695448	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2976	7635665	695451	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2977	7635660	695454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2978	7635654	695458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2979	7635650	695460	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2980	7635645	695464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2981	7635642	695465	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2982	7635638	695469	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2983	7635634	695470	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2984	7635631	695472	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2985	7635627	695474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2986	7635623	695476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2987	7635619	695478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2988	7635616	695481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2989	7635611	695484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2990	7635607	695486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2991	7635602	695489	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2992	7635599	695492	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2993	7635596	695492	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2994	7635595	695493	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2995	7635593	695495	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2996	7635587	695498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2997	7635585	695500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2998	7635582	695501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact2999	7635576	695506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3000	7635572	695507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3001	7635569	695504	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3002	7635566	695495	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3003	7635557	695501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3004	7635560	695513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3005	7635557	695518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3006	7635551	695519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3007	7635548	695522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3008	7635546	695524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3009	7635542	695524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3010	7635540	695526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3011	7635536	695529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3012	7635525	695536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3013	7635522	695540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3014	7635515	695543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3015	7635511	695547	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3016	7635507	695547	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3017	7635502	695548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3018	7635500	695551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3019	7635496	695554	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3020	7635492	695556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3021	7635489	695557	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3022	7635483	695561	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3023	7635478	695563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3024	7635476	695566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3025	7635470	695567	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3026	7635463	695572	0.00	0.00	0.00	0.00	0.00	Log	-
Contact3027	7635458	695576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3028	7635456	695576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3029	7635453	695579	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3030	7635449	695581	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3031	7635445	695585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3032	7635439	695590	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3033	7635437	695591	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3034	7635431	695594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3035	7635423	695597	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3036	7635417	695592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3037	7635408	695578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3038	7635405	695574	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3039	7635392	695580	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3040	7635396	695590	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3041	7635402	695600	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3042	7635406	695609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3043	7635400	695612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3044	7635397	695614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3045	7635392	695617	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3046	7635389	695620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3047	7635386	695623	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3048	7635381	695624	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3049	7635379	695627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3050	7635374	695629	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3051	7635368	695633	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3052	7635358	695638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3053	7635353	695637	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3054	7635352	695643	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3055	7635350	695644	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3056	7635346	695645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3057	7635344	695648	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3058	7635342	695651	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3059	7635337	695647	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3060	7635334	695655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3061	7635327	695656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3062	7635324	695656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3063	7635322	695660	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3064	7635320	695662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3065	7635316	695662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3066	7635315	695666	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3067	7635310	695670	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3068	7635306	695671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3069	7635303	695672	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3070	7635301	695675	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3071	7635293	695667	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3072	7635237	695658	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3073	7635237	695664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3074	7635210	695654	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3075	7635210	695662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3076	7635210	695655	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3077	7635208	695645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3078	7635203	695637	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3079	7635198	695645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3080	7635195	695653	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3081	7635192	695668	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3082	7635188	695674	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3083	7635184	695681	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3084	7635185	695691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3085	7635177	695700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3086	7635167	695711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3087	7635161	695726	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3088	7635158	695734	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3089	7635144	695746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3090	7635133	695758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3091	7635126	695775	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3092	7635115	695785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3093	7635107	695789	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3094	7635097	695796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3095	7635085	695803	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3096	7635076	695809	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3097	7635066	695816	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3098	7635057	695822	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3099	7635045	695829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3100	7635026	695839	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3101	7635015	695846	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3102	7635004	695852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3103	7634995	695859	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3104	7634986	695865	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3105	7634977	695870	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3106	7634967	695879	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3107	7634955	695884	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3108	7634944	695891	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3109	7634937	695897	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3110	7634926	695904	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3111	7634914	695910	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3112	7634904	695917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3113	7634892	695922	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3114	7634884	695929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3115	7634874	695936	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3116	7634865	695940	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3117	7634859	695942	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3118	7634846	695950	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3119	7634838	695957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3120	7634827	695961	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3121	7634816	695967	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3122	7634805	695975	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3123	7634796	695981	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3124	7634786	695986	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3125	7634776	695992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3126	7634766	695998	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3127	7634756	696006	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3128	7634745	696012	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3129	7634735	696021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3130	7634726	696025	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3131	7634715	696032	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3132	7634704	696037	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3133	7634693	696043	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3134	7634684	696048	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3135	7634673	696056	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3136	7634747	695936	9.22	5.83	7.28	0.00	1.80	debris	-
Contact3137	7634664	696060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3138	7634654	696067	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3139	7634644	696072	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3140	7634633	696079	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3141	7634620	696085	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3142	7634613	696091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3143	7634603	696098	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3144	7634590	696105	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3145	7634582	696110	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3146	7634572	696116	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3147	7634561	696123	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3148	7634549	696130	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3149	7634540	696139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3150	7634528	696143	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3151	7634523	696146	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3152	7634509	696154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3153	7634500	696162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3154	7634488	696168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3155	7634479	696173	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3156	7634469	696176	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3157	7634463	696176	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3158	7634462	696183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3159	7634447	696190	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3160	7634436	696197	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3161	7634420	696205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3162	7634410	696214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3163	7634397	696221	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3164	7634383	696230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3165	7634373	696240	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3166	7634358	696246	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3167	7634347	696251	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3168	7634325	696262	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3169	7634322	696270	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3170	7634308	696278	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3171	7634294	696288	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3172	7634285	696293	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3173	7634268	696300	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3174	7634255	696310	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3175	7634246	696317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3176	7634231	696326	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3177	7634216	696335	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3178	7634208	696341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3179	7634191	696349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3180	7634178	696358	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3181	7634155	696371	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3182	7634146	696375	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3183	7634129	696384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3184	7634108	696397	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3185	7634095	696406	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3186	7634082	696410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3187	7634076	696415	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3188	7634064	696424	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3189	7634052	696434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3190	7634034	696443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3191	7634009	696457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3192	7633987	696472	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3193	7633968	696484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3194	7633947	696498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3195	7633926	696508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3196	7633899	696525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3197	7633881	696538	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3198	7633859	696552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3199	7633839	696564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3200	7633817	696576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3201	7633799	696587	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3202	7633777	696600	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3203	7633750	696614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3204	7633733	696627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3205	7633711	696639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3206	7633689	696656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3207	7633666	696664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3208	7633647	696677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3209	7633625	696693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3210	7633604	696704	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3211	7633582	696717	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3212	7633556	696734	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3213	7633565	696755	0.00	0.00	39.55	0.00	15.80	Piling	?
Contact3214	7633456	696758	9.87	0.00	10.73	0.00	4.62	debris	-
Contact3215	7633339	696755	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact3216	7633408	696725	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3217	7633415	696718	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3218	7633427	696712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3219	7633435	696707	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3220	7633440	696702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3221	7633439	696701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3222	7633449	696696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3223	7633343	696782	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3224	7633366	696755	2.59	0.00	0.00	0.00	0.00	debris	-
Contact3225	7633368	696847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3226	7633359	696854	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3227	7633349	696861	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3228	7633339	696867	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3229	7633330	696873	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3230	7633324	696875	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3231	7633317	696879	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3232	7633308	696883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3233	7633299	696890	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3234	7633292	696894	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3235	7633285	696899	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3236	7633272	696909	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3237	7633259	696916	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3238	7633249	696921	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3239	7633240	696927	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3240	7633232	696933	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3241	7633223	696938	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3242	7633215	696942	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3243	7633206	696947	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3244	7633198	696952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3245	7633188	696957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3246	7633180	696962	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3247	7633170	696969	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3248	7633162	696973	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3249	7633156	696978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3250	7633145	696984	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3251	7633138	696991	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3252	7633131	696995	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3253	7633122	696999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3254	7633114	697004	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3255	7633102	697012	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3256	7633095	697016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3257	7633088	697020	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3258	7633077	697028	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3259	7633062	697037	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3260	7633056	697040	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3261	7633046	697047	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3262	7633036	697051	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3263	7633026	697055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3264	7633008	697066	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3265	7632995	697049	0.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3266	7632993	697017	2.90	1.15	0.00	0.00	0.00	Debris - NMH	-
Contact3267	7632968	697007	2.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3268	7632938	696993	26.10	3.48	0.00	0.00	0.00	Debris - NMH	-
Contact3269	7632916	696992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3270	7632905	696987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3271	7632899	697001	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3272	7632890	697013	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3273	7632875	697031	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact3274	7632800	697023	45.72	0.00	9.08	0.00	1.84	debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3275	7632887	697111	10.88	4.68	0.00	0.00	0.00	Debris - NMH	-
Contact3276	7632953	697052	1.00	0.00	13.02	0.00	5.42	debris	-
Contact3277	7632786	696996	1.83	2.04	0.00	0.00	0.00	Debris - NMH	-
Contact3278	7632884	697227	75.24	6.66	0.00	0.00	0.00	Anchor Drag	-
Contact3279	7632682	697150	4.81	3.81	0.00	0.00	0.00	Debris - NMH	-
Contact3280	7632531	697154	135.90	35.56	0.00	0.00	0.00	Structure	-
Contact3281	7632297	697357	245.60	29.17	0.00	0.00	0.00	Structure	-
Contact3282	7632375	697181	37.94	24.74	0.00	0.00	0.00	Structure	-
Contact3283	7632397	697371	31.98	6.15	0.00	0.00	0.00	Debris - NMH	-
Contact3284	7632197	697614	336.45	44.69	0.00	0.00	0.00	Structure	-
Contact3285	7632207	697752	6.66	2.15	3.46	0.00	0.46	debris	-
Contact3286	7632236	697827	1.83	0.84	0.00	0.00	0.00	Debris - NMH	-
Contact3287	7632266	697829	1.79	1.45	0.00	0.00	0.00	Debris - NMH	-
Contact3288	7632506	697996	7.52	0.00	1.00	0.00	0.12	debris	-
Contact3289	7632414	697797	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3290	7632470	697787	3.39	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3291	7632165	697910	1.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3292	7632297	697608	0.77	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3293	7632442	697574	3.58	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3294	7632461	697492	0.63	0.00	0.00	0.00	0.00	debris	-
Contact3295	7632202	697540	1.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3296	7632235	697612	3.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3297	7632254	697648	2.35	0.00	1.08	0.00	0.18	debris	-
Contact3298	7632271	697675	0.99	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3299	7637499	694553	6.46	0.00	0.39	0.00	0.07	debris	-
Contact3300	7637415	694578	64.11	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3301	7637407	694634	50.35	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3302	7637299	694625	3.63	0.00	0.00	0.00	0.00	debris	-
Contact3303	7637275	694647	3.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3304	7637240	694637	0.91	0.00	2.36	0.00	1.13	debris	-
Contact3305	7637196	694641	0.96	0.00	0.85	0.00	0.51	debris	-
Contact3306	7637281	694700	2.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3308	7637210	694682	6.05	0.00	1.93	0.00	0.65	debris	-
Contact3309	7637193	694658	2.64	0.00	1.50	0.00	0.70	debris	-
Contact3310	7637076	694699	7.37	0.00	1.92	0.00	0.86	debris	-
Contact3311	7637047	694711	1.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3312	7636808	694834	0.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3313	7636986	694800	1.80	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3314	7636964	694768	0.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3315	7636839	695059	0.67	3.40	0.00	0.00	0.00	Debris - NMH	-
Contact3316	7636697	694938	4.19	0.00	1.06	0.00	0.37	debris	-
Contact3317	7636720	695030	2.59	0.00	0.20	0.00	0.03	debris	-
Contact3318	7636619	695018	0.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3319	7636535	695047	4.08	0.00	0.63	0.00	0.26	debris	-
Contact3320	7636521	695036	1.18	0.00	1.90	0.00	1.10	debris	-
Contact3321	7636456	695078	1.62	0.00	2.93	0.00	2.01	debris	-
Contact3322	7636443	695140	0.74	0.00	0.83	0.00	0.24	debris	-
Contact3323	7636455	695159	1.03	0.00	4.76	0.00	1.15	debris	-
Contact3324	7636389	695134	0.81	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3325	7636370	695138	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3328	7636171	695372	207.01	0.00	0.00	0.00	0.00	Anchor Drag	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3329	7636161	695364	1.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3330	7636019	695364	0.76	0.00	0.00	0.00	0.00	debris	-
Contact3331	7636272	695119	3.97	0.00	2.88	0.00	1.55	debris	-
Contact3332	7636160	695183	0.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3333	7635802	695563	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3334	7635840	695580	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3335	7635691	695485	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3336	7635678	695494	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3337	7635651	695617	3.02	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3338	7635593	695842	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3339	7635444	695614	6.28	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3340	7635472	695578	1.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3341	7635337	695669	4.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3342	7635459	695752	2.43	0.00	1.04	0.00	0.28	debris	-
Contact3343	7635278	695908	21.89	0.00	12.09	0.00	2.06	debris	-
Contact3344	7635292	695874	3.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3345	7635299	695690	0.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3346	7635380	695975	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3347	7634767	696262	2.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3348	7634807	696141	1.19	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3349	7634736	696169	3.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3350	7633704	696794	1.84	0.00	1.04	0.00	0.50	debris	-
Contact3351	7633516	696936	0.86	0.00	1.01	0.00	0.29	debris	-
Contact3352	7633415	696956	1.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3353	7633421	696969	0.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3354	7633442	697011	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3355	7633446	697026	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3356	7633472	696956	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3357	7633494	696943	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3358	7633098	697225	2.87	0.00	0.45	0.00	0.10	debris	-
Contact3359	7633087	697132	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3360	7633218	697081	3.26	0.00	1.07	0.00	0.40	debris	-
Contact3361	7633195	697088	1.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3362	7633167	697082	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3363	7633265	697052	1.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3364	7632832	697402	4.34	0.00	6.04	0.00	0.96	debris	-
Contact3365	7632612	697476	3.92	0.00	0.00	0.00	0.00	debris	-
Contact3366	7632431	697142	22.31	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3367	7632424	697148	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3368	7632415	697202	2.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3369	7632479	697292	2.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3370	7632484	697309	2.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3371	7632615	697183	1.94	2.26	0.00	0.00	0.00	Debris - NMH	-
Contact3372	7632607	697157	0.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3373	7632634	697160	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3374	7632725	697023	2.05	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3375	7632739	697018	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3376	7632721	697327	1.87	0.00	7.45	0.00	2.16	debris	-
Contact3377	7632710	697411	0.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3378	7632697	697419	2.46	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3379	7632538	697315	1.83	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3380	7632338	697690	1.84	0.00	1.07	0.00	0.68	Debris - NMH	-
Contact3381	7632532	697480	1.26	0.00	2.71	0.00	0.61	debris	-
Contact3382	7632400	697389	2.14	0.00	0.00	0.00	0.00	debris	-
Contact3383	7632414	697405	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3384	7632441	697412	1.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3385	7632311	697559	1.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3386	7632247	697505	2.81	0.00	4.00	0.00	0.49	evaluated & Dismiss	-
Contact3387	7632445	697741	1.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3388	7632491	697730	1.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3389	7632496	697635	1.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3390	7632513	697701	2.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3391	7633934	696636	0.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3392	7633967	696683	1.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3393	7635204	695922	1.60	0.00	1.46	0.00	0.33	Debris - NMH	-
Contact3394	7635361	696019	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3395	7634963	696006	0.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3396	7634992	696013	0.95	0.00	3.62	0.00	1.23	debris	-
Contact3397	7635811	695399	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3398	7635825	695390	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3399	7635846	695359	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3400	7635873	695353	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3401	7636619	695018	0.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3402	7636625	695052	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3403	7636628	695065	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3404	7637522	694536	4.48	0.00	1.62	0.00	0.32	debris	-
Contact3405	7637451	694338	2.91	0.00	0.20	0.00	0.05	Sonar Artifact	-
Contact3406	7637392	694395	6.46	8.98	0.00	0.00	0.00	Debris - NMH	-
Contact3407	7634261	696319	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3408	7634245	696329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3409	7634233	696337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3410	7634220	696342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3411	7634208	696345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3412	7634192	696361	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3413	7634146	696387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3414	7634122	696397	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3415	7634111	696408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3416	7634099	696414	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3417	7634087	696422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3418	7634079	696432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3419	7634068	696438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3420	7634047	696454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3421	7634021	696459	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3422	7634009	696477	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3423	7633980	696491	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3424	7633964	696501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3425	7633936	696515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3426	7633916	696528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3427	7633895	696539	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3428	7633873	696554	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3429	7633857	696566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3430	7633833	696580	0.00	0.00	0.00	0.00	0.00	Piling	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3431	7633811	696590	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3432	7633787	696607	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3433	7633765	696616	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3434	7633748	696631	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3435	7633726	696641	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3436	7633704	696656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3437	7633686	696666	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3438	7633663	696685	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3439	7633641	696695	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3440	7633619	696710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3441	7633597	696723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3442	7633573	696730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3443	7633510	696679	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3444	7633501	696684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3445	7633494	696689	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3446	7633486	696692	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3447	7633480	696696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3448	7633472	696701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3449	7633467	696705	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3450	7633460	696709	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3451	7633455	696713	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3452	7633449	696715	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3453	7633444	696718	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3454	7633433	696723	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3455	7633424	696729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3456	7633419	696734	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3457	7633365	696755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3458	7633357	696761	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3459	7633367	696784	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3460	7633353	696794	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3461	7633385	696856	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3462	7633378	696858	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3463	7633364	696868	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3464	7633355	696873	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3465	7633348	696877	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3466	7633340	696879	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3467	7633330	696887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3468	7633322	696892	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3469	7633313	696897	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3470	7633305	696903	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3471	7633298	696905	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3472	7633282	696911	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3473	7633270	696920	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3474	7633262	696928	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3475	7633251	696933	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3476	7633247	696936	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3477	7633238	696938	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3478	7633227	696944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3479	7633219	696947	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3480	7633213	696961	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3481	7633199	696962	0.00	0.00	0.00	0.00	0.00	Piling	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3482	7633192	696965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3483	7633186	696974	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3484	7633180	696976	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3485	7633171	696978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3486	7633161	696994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3487	7633150	696996	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3488	7633146	696998	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3489	7633137	696998	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3490	7633130	697005	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3491	7633115	697014	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3492	7633108	697019	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3493	7633104	697022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3494	7633091	697025	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3495	7633072	697041	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3496	7633066	697046	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3497	7633059	697050	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3498	7633052	697055	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3499	7633039	697060	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3500	7633022	697070	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3501	7632900	697025	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3502	7632869	697052	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3503	7632820	697023	21.96	0.00	13.59	0.00	1.80	debris	-
Contact3504	7632353	697443	72.77	38.09	0.00	0.00	0.00	Structure	-
Contact3505	7632228	697650	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3506	7631368	698403	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3507	7631353	698404	8.97	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3508	7631371	698415	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3509	7631354	698414	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3510	7631361	698424	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3511	7631320	698475	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3512	7631289	698446	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3513	7631356	698600	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3514	7631273	698702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3515	7631282	698562	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3516	7631138	698699	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3517	7631166	698726	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3518	7631196	698754	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3519	7631184	698796	25.62	22.13	0.00	0.00	0.00	Dolphin	-
Contact3520	7631100	698884	21.37	20.51	0.00	0.00	0.00	Dolphin	-
Contact3521	7631015	698979	19.01	12.46	0.00	0.00	0.00	Dolphin	-
Contact3522	7630925	699072	15.66	20.50	0.00	0.00	0.00	Dolphin	-
Contact3523	7630738	699129	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3524	7630766	699092	1.18	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3525	7630589	699387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3526	7630560	699420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3527	7630544	699441	1.17	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3528	7630545	699452	2.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3529	7630529	699454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3530	7630505	699488	18.30	0.00	0.00	0.00	0.00	Dolphin	-
Contact3531	7630441	699562	23.44	0.00	0.00	0.00	0.00	Dolphin	-
Contact3532	7630354	699532	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3533	7630322	699601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3534	7630274	699641	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3535	7630237	699708	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3536	7630206	699756	21.42	0.00	0.00	0.00	0.00	Dolphin	-
Contact3537	7630172	699815	36.46	21.74	0.00	0.00	0.00	Dolphin	-
Contact3538	7630142	699861	18.65	12.31	0.00	0.00	0.00	Dolphin	-
Contact3539	7630121	699903	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3540	7630099	699964	58.73	0.00	0.00	0.00	0.00	Dolphin	-
Contact3541	7630083	699979	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3542	7630063	699998	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3543	7630037	700036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3544	7630012	700055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3545	7629967	700115	36.85	51.88	0.00	0.00	0.00	Dolphin	-
Contact3546	7629891	700149	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3547	7629877	700171	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3548	7629912	700116	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3549	7629806	700250	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3550	7629758	700302	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3551	7629704	700349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3552	7629624	700303	6.26	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3553	7629602	700280	2.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3554	7629463	700669	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3555	7629399	700531	2.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3556	7629404	700536	0.00	0.00	0.00	0.00	0.00	Evaluated & Dismiss	-
Contact3557	7629428	700552	0.00	0.00	0.00	0.00	0.00	Evaluated & Dismiss	-
Contact3558	7629416	700558	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3559	7629256	700892	46.29	0.00	0.00	0.00	0.00	Piling	-
Contact3560	7629444	700697	21.74	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3561	7628980	701073	43.45	237.53	0.00	0.00	0.00	Structure	-
Contact3562	7628841	701033	36.23	6.18	0.00	0.00	0.00	Debris - NMH	-
Contact3563	7629188	701242	2.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3564	7629058	701118	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3565	7628591	701701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3566	7628555	701706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3567	7628530	701733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3568	7628502	701766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3569	7628481	701795	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3570	7628456	701823	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3571	7628444	701839	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3572	7628426	701886	53.94	41.08	0.00	0.00	0.00	Dolphin	-
Contact3573	7628328	701899	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3574	7628340	702015	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3575	7628301	702026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3576	7628225	702122	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3577	7628198	702164	55.35	31.90	0.00	0.00	0.00	Dolphin	-
Contact3578	7628190	702203	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3579	7628182	702212	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3580	7628175	702224	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3581	7628168	702231	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3582	7628163	702237	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3583	7628157	702245	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3584	7628149	702253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3585	7628143	702260	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3586	7628138	702264	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3587	7628135	702273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3588	7628127	702280	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3589	7628118	702291	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3590	7628113	702297	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3591	7628108	702304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3592	7628103	702311	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3593	7628097	702318	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3594	7628089	702323	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3595	7628085	702335	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3596	7628077	702341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3597	7628072	702350	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3598	7628066	702353	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3599	7628064	702360	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3600	7628048	702364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3601	7628031	702381	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3602	7628016	702394	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3603	7628003	702404	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3604	7627985	702421	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3605	7627976	702431	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3606	7627952	702447	41.51	38.54	0.00	0.00	0.00	Dolphin	-
Contact3607	7627949	702449	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3608	7627865	702541	9.05	0.00	10.21	0.00	5.85	debris	-
Contact3609	7627830	702505	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3610	7627861	702543	9.83	0.00	12.57	0.00	7.22	debris	-
Contact3611	7627828	702592	31.96	0.00	0.00	0.00	0.00	Piling	-
Contact3612	7627795	702612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3613	7627771	702633	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3614	7627751	702657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3615	7627735	702680	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3616	7627723	702716	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3617	7627690	702722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3618	7627682	702738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3619	7627557	702895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3620	7627575	702869	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3621	7627587	702849	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3622	7627602	702831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3623	7627620	702806	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3624	7627661	702782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3625	7627669	702751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3626	7627549	702805	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3627	7627544	702763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3628	7627363	702992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3629	7627277	703155	8.34	0.00	12.07	0.00	3.71	Piling	Submerged
Contact3630	7627288	703152	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3631	7627268	703114	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3632	7627256	703074	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3633	7627250	703035	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3634	7627244	703023	0.00	0.00	0.00	0.00	0.00	Piling	Submerged

Lower Willamette River  
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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3635	7627238	702996	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact3636	7627594	703370	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact3637	7627129	703286	62.59	18.81	0.00	0.00	0.00	Anchor Drag	-
Contact3638	7626811	703549	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3639	7626737	703627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3640	7626832	703480	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3641	7626830	703483	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3642	7626827	703486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3643	7626799	703510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3644	7626795	703513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3645	7626792	703516	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3646	7626764	703537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3647	7626760	703540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3648	7626755	703544	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3649	7626739	703555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3650	7626734	703563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3651	7626704	703590	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3652	7626484	703901	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3653	7626740	703938	34.59	0.00	3.54	0.00	1.59	evaluated & Dismiss	-
Contact3654	7626370	704013	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3655	7626535	704181	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3656	7626376	704289	36.46	0.00	6.72	0.00	1.33	Log	-
Contact3657	7626349	704284	34.79	0.00	3.63	0.00	0.88	Log	-
Contact3658	7625955	704725	9.55	0.00	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact3659	7625507	704992	41.43	0.00	3.72	0.00	1.93	Log	-
Contact3660	7625247	705236	27.96	0.00	3.24	0.00	1.07	Log	-
Contact3661	7624709	705257	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3662	7624665	705270	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3663	7624629	705299	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3664	7624648	705307	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3665	7624598	705326	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3666	7624945	705143	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3667	7624866	705160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3668	7624838	705171	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3669	7624450	705393	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3670	7624503	705376	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3671	7624546	705356	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3672	7624584	705656	18.67	4.10	0.00	0.00	0.00	debris	-
Contact3673	7623920	705715	50.94	0.00	28.41	0.00	19.11	Depression	-
Contact3674	7623882	705732	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3675	7623882	705751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3676	7623840	705771	15.17	0.00	0.00	0.00	0.00	Dolphin	-
Contact3677	7624087	706004	33.88	0.00	16.44	0.00	3.75	debris	Proud
Contact3678	7623785	705797	47.59	0.00	4.97	0.00	2.51	Dolphin	-
Contact3679	7623733	705830	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact3680	7623652	705879	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact3681	7623665	705808	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3682	7623660	705810	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3683	7623650	705817	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3684	7623641	705802	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3685	7623640	705791	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3686	7623644	705793	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3687	7623738	705802	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3688	7623731	705809	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3689	7623727	705810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3690	7623735	705793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3691	7623730	705796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3692	7623731	705784	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3693	7623723	705788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3694	7623723	705774	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3695	7623717	705778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3696	7623719	705765	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3697	7623713	705768	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3698	7623717	705802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3699	7623709	705796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3700	7623705	705785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3701	7623704	705778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3702	7623712	705804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3703	7623707	705797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3704	7623701	705788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3705	7623690	705774	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3706	7623711	705807	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3707	7623703	705798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3708	7623698	705791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3709	7623689	705779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3710	7623698	705801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3711	7623693	705792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3712	7623689	705784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3713	7623815	705665	1.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3714	7623772	705693	1.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3715	7623750	706131	6.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3716	7623705	706084	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3717	7623181	706169	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3718	7623168	706181	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3719	7623148	706188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3720	7623140	706195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3721	7623136	706202	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3722	7623134	706205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3723	7623129	706208	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3724	7623117	706220	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3725	7623106	706225	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3726	7623106	706224	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3727	7623074	706237	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3728	7622925	706315	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3729	7622984	706296	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3730	7622998	706280	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3731	7623011	706278	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3732	7623025	706273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3733	7623038	706258	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3734	7622785	706177	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3735	7622774	706200	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact3736	7622769	706208	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3737	7622761	706262	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3738	7622750	706269	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3739	7622700	706223	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3740	7622682	706238	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3741	7622656	706255	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3742	7622721	706299	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3743	7622598	706605	30.53	0.00	0.00	0.00	0.00	Piling	-
Contact3744	7622507	706472	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3745	7622960	706603	5.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3746	7622902	706638	3.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3747	7622829	706648	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3748	7622488	706715	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3749	7622388	706769	29.84	0.00	0.00	0.00	0.00	Depression	-
Contact3750	7622355	706850	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3751	7622383	706816	1.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3752	7622326	706887	0.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3753	7622319	706909	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3754	7622279	706917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3755	7622288	706958	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3756	7622452	707140	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3757	7622493	707164	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3758	7622610	707069	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3759	7622611	706849	7.55	0.00	0.00	0.00	0.00	debris	-
Contact3760	7622039	707209	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3761	7622015	707227	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3762	7622010	707224	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3763	7622034	707278	1.83	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3764	7621971	707269	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3765	7621928	707317	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3766	7621874	707474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3767	7621935	707396	0.00	0.00	0.00	0.00	0.00	Salvaged & Dismiss	-
Contact3768	7622011	707601	42.46	0.00	2.37	0.00	1.63	Anchor Drag	-
Contact3769	7621947	707696	13.49	0.00	1.76	0.00	1.00	Log	-
Contact3770	7621549	707727	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3771	7621443	707796	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3772	7621824	707450	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3773	7621778	707444	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3774	7621779	707531	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3775	7621754	707548	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3776	7621754	707573	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3777	7621582	707653	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3778	7621652	707683	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3779	7621623	707676	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3780	7623576	706021	84.38	0.00	0.00	0.00	0.00	Piling	-
Contact3781	7627078	703302	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3782	7627016	703367	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3783	7627531	702833	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3784	7627528	702843	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3785	7632038	697471	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3786	7632044	697499	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3787	7632082	697455	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3788	7632073	697457	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3789	7632129	697582	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact3790	7632148	697570	0.57	0.00	5.09	0.00	1.37	debris	-
Contact3791	7632148	697580	0.61	1.47	0.00	0.00	0.00	Debris - NMH	-
Contact3792	7632147	697580	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3793	7632162	697619	0.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3794	7632134	697714	1.35	0.00	0.63	0.00	0.14	Debris - NMH	-
Contact3795	7632255	697731	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3796	7632253	697725	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3797	7632251	697717	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3798	7632244	697706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3799	7632236	697694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3800	7632232	697686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3801	7632228	697680	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3802	7632223	697669	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3803	7632219	697661	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3804	7632215	697654	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3805	7632211	697646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3806	7632204	697635	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3807	7632197	697627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3808	7632197	697622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3809	7632191	697611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3810	7632184	697598	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3811	7632181	697592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3812	7632176	697585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3813	7632167	697572	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3814	7632163	697568	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3815	7632162	697565	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3816	7632158	697558	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3817	7632154	697551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3818	7632148	697540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3819	7632143	697536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3820	7632141	697527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3821	7632133	697518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3822	7632130	697506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3823	7632124	697500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3824	7632123	697492	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3825	7632116	697482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3826	7632110	697472	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3827	7632104	697465	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3828	7632101	697458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3829	7632097	697449	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3830	7632092	697442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3831	7632084	697430	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3832	7632079	697423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3833	7632078	697416	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3834	7632072	697407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3835	7632068	697399	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3836	7632065	697394	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3837	7632061	697386	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3838	7632058	697377	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3839	7632051	697369	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3840	7632045	697357	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3842	7632040	697350	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3843	7632037	697343	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3845	7632039	697617	0.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3846	7632059	697598	0.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3847	7632058	697528	1.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3848	7632212	697795	2.75	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3849	7639126	693319	33.20	0.00	4.33	0.00	1.21	debris	-
Contact3850	7639181	693262	14.27	0.00	3.66	0.00	1.14	debris	-
Contact3851	7639488	693456	26.13	0.00	9.85	0.00	2.12	debris	-
Contact3852	7639675	693274	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3853	7639530	693004	1.68	0.00	0.00	0.00	0.00	debris	-
Contact3854	7639584	692928	80.42	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3855	7639587	692880	0.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3856	7639913	692923	5.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3857	7639708	692827	2.11	0.00	1.84	0.00	1.08	debris	-
Contact3858	7639611	692819	1.39	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3859	7639630	692855	2.55	0.00	0.00	0.00	0.00	debris	-
Contact3860	7639612	692890	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3861	7639655	692761	1.03	2.50	2.52	0.00	0.73	debris	-
Contact3862	7639956	692887	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3863	7639839	692919	2.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3864	7640134	692628	3.67	0.00	1.22	0.00	0.42	debris	-
Contact3865	7640001	692853	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3866	7640025	692841	4.58	0.00	0.00	0.00	0.00	debris	-
Contact3867	7639997	692748	1.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3868	7640218	692745	4.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3869	7640228	692763	1.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3870	7640130	692566	2.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3871	7639800	692641	1.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3872	7639937	692459	3.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3873	7640135	692499	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3874	7640178	692490	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3875	7640184	692458	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3876	7640193	692124	3.64	0.00	4.10	0.00	1.89	Anchor Drag	-
Contact3877	7640075	692259	2.96	0.00	1.46	0.00	0.61	debris	-
Contact3878	7640039	692303	11.17	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3879	7640096	692298	1.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3880	7640476	691827	0.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3881	7640421	691847	2.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3882	7640648	691565	0.88	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3883	7640652	691580	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3884	7640641	691591	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3885	7640627	691570	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3886	7640859	691921	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3887	7640906	691878	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3888	7640721	691543	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3889	7640941	691626	2.26	0.00	1.19	0.00	0.58	debris	-
Contact3890	7641035	691498	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact3891	7641074	691549	2.10	0.00	0.67	0.00	0.24	aluated & Dismiss	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3892	7640775	691403	3.41	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3893	7640785	691309	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3894	7640869	691349	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact3895	7638995	693389	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3896	7639032	693354	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3897	7639049	693336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3898	7639065	693323	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3899	7639077	693311	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3900	7639105	693284	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3901	7639115	693275	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3902	7639129	693261	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3903	7639155	693237	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3904	7639160	693232	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3905	7639170	693226	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3906	7639189	693205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3907	7639209	693188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3908	7639220	693179	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3909	7639233	693164	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3910	7639254	693148	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3911	7639263	693139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3912	7639277	693123	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3913	7639301	693104	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3914	7639310	693100	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3915	7639318	693090	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3916	7639328	693075	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3917	7639336	693071	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3918	7639346	693064	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3919	7639369	693040	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3920	7639377	693034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3921	7639383	693030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3922	7639392	693019	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3923	7639404	693008	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3924	7639425	692988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3925	7639440	692972	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3926	7639451	692960	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3927	7639471	692944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3928	7639474	692937	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3929	7639478	692934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3930	7639482	692932	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3931	7639501	692911	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3932	7639503	692906	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3933	7639505	692903	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3934	7639511	692897	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3935	7639529	692880	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3936	7639530	692877	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3937	7639533	692872	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3938	7639547	692853	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3939	7639556	692841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3940	7639559	692837	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3941	7639579	692812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3942	7639589	692804	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3943	7639593	692796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3944	7639599	692789	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3945	7639603	692782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3946	7639609	692769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3947	7639612	692763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3948	7639619	692758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3949	7639624	692757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3950	7639623	692759	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3951	7639622	692758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3952	7639623	692755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3953	7639622	692753	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3954	7639623	692753	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3955	7639623	692752	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3956	7639628	692751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3957	7639633	692746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3958	7639636	692739	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3959	7639629	692717	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3960	7639659	692706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3961	7639662	692700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3962	7639667	692696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3963	7639669	692694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3964	7639671	692691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3965	7639676	692686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3966	7639680	692677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3967	7639685	692670	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3968	7639696	692660	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3969	7639897	692830	2.19	0.00	1.15	0.00	0.67	debris	-
Contact3970	7639707	692645	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3971	7639714	692638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3972	7639719	692632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3973	7639723	692628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3974	7639727	692623	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3975	7639731	692616	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3976	7639733	692612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3977	7639735	692608	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3978	7639750	692596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3979	7639755	692593	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3980	7639756	692585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3981	7639765	692577	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3982	7639783	692556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3983	7639787	692550	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3984	7639795	692537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3985	7640134	692628	2.84	0.00	3.38	0.00	1.14	debris	-
Contact3987	7639958	692860	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3988	7639950	692847	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact3989	7639901	692569	0.75	0.00	0.00	0.00	0.00	debris	-
Contact3990	7639900	692569	0.00	0.00	0.00	0.00	0.00	Unclassified	-
Contact3991	7639866	692538	1.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact3992	7639804	692526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3993	7639810	692515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3994	7639819	692505	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact3995	7639824	692496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3996	7639830	692490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3997	7639836	692484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3998	7639841	692473	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact3999	7639856	692457	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4000	7639859	692454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4001	7639871	692435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4002	7639876	692432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4003	7639864	692447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4004	7639884	692424	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4005	7639895	692410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4006	7639898	692407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4007	7639902	692402	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4008	7639949	692336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4009	7639954	692330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4010	7639958	692320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4011	7639935	692353	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4012	7639928	692363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4013	7639923	692368	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4014	7639921	692374	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4015	7640262	692371	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact4016	7640277	692389	1.77	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4017	7640257	692368	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4018	7640099	692296	43.06	0.00	4.66	0.00	3.10	Anchor Drag	-
Contact4019	7639979	692308	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4020	7639982	692304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4021	7639986	692299	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4022	7639988	692293	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4023	7639996	692280	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4024	7640003	692270	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4025	7640011	692262	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4026	7640018	692249	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4027	7640029	692235	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4028	7640037	692220	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4029	7640049	692208	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4030	7640058	692199	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4031	7640075	692208	2.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4032	7640049	692351	1.10	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4033	7640072	692361	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4034	7640073	692177	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4035	7640084	692167	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4036	7640099	692151	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4037	7640110	692137	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4038	7640114	692128	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4039	7640127	692112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4040	7640143	692091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4041	7640152	692079	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4042	7640157	692073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4043	7640167	692061	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4044	7640177	692049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4045	7640192	692028	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4046	7640198	692022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4047	7640211	692008	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4048	7640217	692001	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4049	7640232	691983	45.52	0.00	0.00	0.00	0.00	Piling	-
Contact4050	7640248	691964	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4051	7640252	691956	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4052	7640257	691948	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4053	7640266	691936	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4054	7640272	691926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4055	7640279	691918	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4056	7640284	691913	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4057	7640295	691900	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4058	7640301	691896	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4059	7640306	691888	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4060	7640308	691879	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4061	7640314	691874	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4062	7640320	691867	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4063	7640323	691862	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4064	7640329	691857	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4065	7640338	691847	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4066	7640342	691842	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4067	7640344	691835	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4068	7640356	691825	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4069	7640358	691821	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4070	7640360	691817	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4071	7640365	691810	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4072	7640369	691805	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4073	7640389	691781	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4074	7640396	691772	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4075	7640406	691762	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4076	7640409	691756	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4077	7640412	691750	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4078	7640425	691737	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4079	7640432	691730	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4080	7640435	691728	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4081	7640434	691722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4082	7640433	691718	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4083	7640436	691717	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4084	7640443	691710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4085	7640443	691706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4086	7640448	691703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4087	7640453	691693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4088	7640460	691686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4089	7640459	691684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4090	7640466	691687	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4091	7640472	691682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4092	7640476	691674	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4093	7640481	691668	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4094	7640484	691657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4095	7640485	691663	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4096	7640489	691656	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4097	7640495	691644	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4098	7640516	691626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4099	7640517	691620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4100	7640521	691619	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4101	7640522	691610	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4102	7640527	691601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4103	7640531	691594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4104	7640895	691914	1.33	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4105	7640903	691912	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4106	7640606	691654	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4107	7640597	691661	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4108	7640527	692087	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4109	7640918	691752	1.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4110	7640863	691807	1.10	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4111	7641038	691694	1.01	0.00	0.46	0.00	0.12	debris	-
Contact4112	7640543	691584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4113	7640551	691575	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4114	7640555	691574	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4115	7640558	691570	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4116	7640558	691567	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4117	7640562	691563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4118	7640568	691557	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4119	7640575	691546	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4120	7640587	691530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4121	7640591	691525	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4122	7640593	691523	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4123	7640597	691518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4124	7640605	691508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4125	7640610	691502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4126	7640617	691496	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4127	7640620	691489	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4128	7640628	691480	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4129	7640633	691473	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4130	7640636	691470	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4131	7640640	691463	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4132	7640645	691457	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4133	7640650	691451	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4134	7640655	691438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4135	7640667	691423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4136	7640672	691420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4137	7640673	691413	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4138	7640681	691407	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4139	7640687	691402	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact4140	7640692	691395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4141	7640713	691371	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4142	7640715	691367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4143	7640719	691363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4144	7640725	691352	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4145	7640729	691345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4146	7640732	691773	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4147	7641006	691585	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4148	7640640	691466	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4149	7640647	691454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4150	7640650	691452	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4151	7640658	691443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4152	7640671	691426	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4153	7640676	691422	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4154	7640680	691416	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4155	7640684	691411	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4156	7640691	691401	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4157	7640697	691393	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4158	7640713	691374	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4159	7640716	691368	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4160	7640719	691364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4161	7640727	691355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4162	7640732	691347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4163	7640931	691662	1.20	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4164	7640749	691324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4165	7640753	691319	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4166	7640761	691312	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4167	7640766	691306	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4168	7640772	691296	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4169	7640780	691281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4170	7640805	691253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4171	7640811	691243	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4172	7640814	691240	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4173	7640821	691233	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4174	7640832	691221	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4175	7640833	691220	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4176	7640835	691218	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4177	7640839	691214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4178	7640841	691207	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4179	7640845	691202	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4180	7640882	691256	1.48	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4181	7641160	691446	2.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4182	7640849	691197	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4183	7640853	691195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4184	7640854	691192	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4185	7640856	691188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4186	7640856	691184	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4187	7640858	691184	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4188	7640862	691182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4189	7640867	691179	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4190	7640871	691174	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4191	7640878	691169	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4192	7640883	691159	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4193	7640886	691155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4194	7640895	691141	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4195	7640904	691128	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4196	7640909	691122	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4197	7640914	691115	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4198	7640916	691112	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4199	7640920	691110	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4200	7640924	691108	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4201	7640928	691103	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4202	7640928	691096	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4203	7640926	691091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4204	7640923	691086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4205	7640919	691080	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4206	7640914	691073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4207	7640909	691066	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4208	7640907	691063	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4209	7640905	691057	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4210	7640902	691055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4211	7640901	691052	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4212	7640897	691045	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4213	7640890	691040	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4214	7640884	691033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4215	7640878	691026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4216	7640873	691015	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4217	7640936	691080	2.19	0.00	1.35	0.00	0.35	debris	-
Contact4218	7641004	691150	1.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4219	7640940	691151	3.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4220	7641011	691193	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4221	7640945	691247	1.31	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4222	7640971	691248	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4223	7640828	691285	0.95	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4224	7640864	691314	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4225	7641181	691413	1.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4226	7641202	691442	2.75	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4227	7641354	691367	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4228	7641133	691494	2.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4229	7641079	691110	1.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4230	7641010	691066	2.44	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4231	7641070	691047	0.77	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4232	7641103	690860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4233	7641183	690792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4234	7641532	691022	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4235	7641218	690756	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4236	7641223	690749	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4237	7641232	690738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4238	7641240	690730	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4239	7641248	690722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4240	7641253	690718	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4241	7641259	690711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4242	7641264	690704	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4243	7641272	690696	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4244	7641279	690691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4245	7641285	690684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4246	7641291	690676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4247	7641297	690670	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4248	7641300	690666	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4249	7641306	690658	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4250	7641325	690642	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4251	7641551	690972	0.75	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4252	7641497	690998	4.60	0.00	0.68	0.00	0.18	debris	-
Contact4253	7641251	690849	1.02	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4254	7641253	690825	1.96	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4255	7641293	690801	1.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4256	7641196	690876	2.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4257	7641232	690893	2.28	0.00	2.51	0.00	1.24	debris	-
Contact4258	7641230	690947	2.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4259	7641326	690637	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4260	7641330	690635	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4261	7641335	690628	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4262	7641345	690617	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4263	7641358	690603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4264	7641368	690596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4265	7641370	690594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4266	7641585	690898	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact4267	7641377	690584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4268	7641379	690579	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4269	7641397	690560	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4270	7641399	690558	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4271	7641404	690555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4272	7641407	690551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4273	7641413	690544	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4274	7641420	690538	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4275	7641428	690529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4276	7641430	690524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4277	7641432	690521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4278	7641436	690520	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4279	7641435	690517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4280	7641438	690520	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4281	7641439	690521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4282	7641439	690521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4283	7641438	690516	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4284	7641437	690511	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4285	7641444	690508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4286	7641450	690504	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4287	7641457	690494	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4288	7641465	690486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4289	7641472	690478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4290	7641479	690474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4291	7641482	690468	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4292	7641490	690462	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4293	7641571	690382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4294	7641475	690451	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4295	7641463	690440	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4296	7641451	690433	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4297	7641432	690427	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4298	7641418	690416	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4299	7641610	690325	24.97	18.16	0.00	0.00	0.00	Dolphin	-
Contact4300	7638978	693405	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4301	7638973	693408	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4302	7638966	693413	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4303	7638965	693415	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4304	7638965	693417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4305	7638961	693420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4306	7638936	693442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4307	7638928	693452	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4308	7638917	693463	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4309	7638903	693476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4310	7638894	693486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4311	7638884	693498	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4312	7638873	693506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4313	7638868	693510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4314	7638863	693515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4315	7638861	693517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4316	7638840	693535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4317	7638824	693548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4318	7638820	693556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4319	7638816	693559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4320	7638808	693564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4321	7638803	693573	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4322	7638796	693579	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4323	7638790	693585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4324	7638780	693592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4325	7638771	693599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4326	7638762	693609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4327	7638761	693612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4328	7638760	693613	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4329	7638759	693613	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4330	7638733	693634	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4331	7638727	693641	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4332	7638723	693646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4333	7638721	693649	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4334	7638712	693656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4335	7638704	693664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4336	7638700	693668	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4337	7638695	693671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4338	7638693	693675	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4339	7638685	693680	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4340	7638684	693682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4341	7638680	693687	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4342	7638672	693694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4343	7638662	693702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4344	7638657	693707	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4345	7638656	693710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4346	7638652	693713	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4347	7638648	693715	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4348	7638643	693719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4349	7638634	693729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4350	7638626	693738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4351	7638617	693746	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4352	7638610	693751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4353	7638604	693758	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4354	7638596	693766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4355	7638590	693771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4356	7638587	693774	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4357	7638583	693777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4358	7638580	693779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4359	7638575	693783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4360	7638567	693789	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4361	7638565	693791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4362	7638554	693801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4363	7638544	693810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4364	7638538	693821	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4365	7638532	693825	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4366	7638529	693829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4367	7638525	693831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4368	7638522	693833	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4369	7638518	693836	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4370	7638515	693837	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4371	7638510	693839	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4372	7638509	693842	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4373	7638509	693841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4374	7638510	693841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4375	7638511	693841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4376	7638510	693843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4377	7638509	693843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4378	7638506	693845	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4379	7638499	693853	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4380	7638489	693861	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4381	7638484	693864	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4382	7638482	693867	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4383	7638479	693869	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4384	7638477	693873	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4385	7638474	693876	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4386	7638470	693880	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4387	7638455	693892	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4388	7638437	693911	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4389	7638429	693917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4390	7638425	693920	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4391	7638419	693926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4392	7638416	693929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4393	7638412	693932	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4394	7638405	693938	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4395	7638398	693943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4396	7638396	693946	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4397	7638394	693946	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4398	7638386	693952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4399	7638368	693970	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4400	7638362	693976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4401	7638356	693981	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4402	7638352	693986	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4403	7638348	693987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4404	7638345	693990	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4405	7638341	693993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4406	7638339	693992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4407	7638339	693993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4408	7638336	693994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4409	7638333	693994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4410	7638328	694002	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4411	7638326	694007	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4412	7638323	694009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4413	7638322	694011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4414	7638320	694014	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4415	7638317	694016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4416	7638316	694018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4417	7638314	694020	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4418	7638311	694022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4419	7638306	694026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4420	7638293	694037	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4421	7638280	694049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4422	7638277	694053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4423	7638275	694056	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4424	7638271	694058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4425	7638259	694067	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4426	7638254	694073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4427	7638251	694076	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4428	7638244	694082	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4429	7638240	694088	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4430	7638232	694094	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4431	7638225	694101	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4432	7638216	694106	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4433	7638210	694113	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4434	7638205	694119	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4435	7638199	694126	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4436	7638191	694133	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4437	7638184	694139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4438	7638178	694145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4439	7638175	694147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4440	7638169	694154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4441	7638158	694162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4442	7638153	694168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4443	7638150	694172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4444	7638146	694174	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4445	7638130	694190	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4446	7638120	694200	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4447	7638110	694209	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4448	7638105	694214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4449	7638100	694219	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4450	7638095	694223	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4451	7638090	694229	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4452	7638085	694231	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4453	7638075	694239	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4454	7638065	694252	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4455	7638060	694257	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4456	7638053	694261	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4457	7638047	694267	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4458	7638044	694271	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4459	7638042	694272	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4460	7638038	694274	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4461	7638021	694292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4462	7638013	694300	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4463	7638009	694305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4464	7638006	694307	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4465	7638005	694309	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4466	7638000	694310	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4467	7637987	694323	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4468	7637979	694331	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4469	7637974	694336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4470	7637970	694338	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4471	7637968	694342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4472	7637965	694347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4473	7637956	694355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4474	7637944	694366	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4475	7637930	694381	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4476	7637916	694396	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4477	7637905	694407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4478	7637894	694418	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4479	7637885	694423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4480	7637873	694434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4481	7637861	694442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4482	7637852	694448	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4483	7637837	694458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4484	7637825	694467	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4485	7637816	694477	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4486	7637799	694487	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4487	7637782	694485	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4488	7639197	693645	169.36	35.92	0.00	0.00	0.00	Dredge Artifact	-
Contact4489	7639110	693823	4.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4490	7638982	693867	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact4491	7638950	693955	2.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4492	7638984	693528	1.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4493	7638982	693528	2.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4494	7638819	693703	2.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4495	7638680	693733	4.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4496	7638848	693950	7.67	0.00	2.82	0.00	0.91	debris	-
Contact4497	7638374	694004	1.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4498	7638363	694024	0.67	0.00	1.62	0.00	0.37	debris	-
Contact4499	7638424	694089	1.62	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4500	7638492	694010	3.25	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4501	7638662	694146	6.09	0.00	1.37	0.00	0.47	debris	-
Contact4502	7638643	694145	1.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4503	7638086	694335	13.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4504	7638245	694580	0.74	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4505	7638335	694626	0.99	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4506	7637997	694370	1.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4507	7638026	694462	3.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4508	7638653	694247	1.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4509	7638551	694339	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4511	7641724	690338	2.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4512	7641750	690345	1.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4513	7642031	690506	1.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4514	7641963	690680	2.20	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4515	7641681	690930	15.27	0.00	3.19	0.00	1.24	debris	-
Contact4516	7640666	692150	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact4517	7640129	692994	4.29	0.00	12.71	0.00	2.72	debris	Scoured In
Contact4518	7640122	693000	1.15	0.00	14.64	0.00	3.14	debris	Scoured In
Contact4519	7639652	693458	11.00	0.00	11.85	0.00	2.95	debris	-
Contact4520	7639653	693357	2.87	0.00	0.64	0.00	0.27	debris	-
Contact4521	7639181	693971	34.46	0.00	7.88	0.00	2.92	Log	-
Contact4522	7638491	694576	8.28	0.00	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact4523	7638477	694586	0.00	0.00	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact4524	7637910	694610	2.81	0.00	52.99	0.00	28.27	debris	-
Contact4525	7637922	694629	0.00	0.00	25.40	0.00	12.86	debris	-
Contact4526	7638040	694361	6.29	9.97	0.00	0.00	0.00	Debris - NMH	-
Contact4527	7639832	692765	2.34	1.08	0.00	0.00	0.00	Debris - NMH	-
Contact4528	7639866	692750	2.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4529	7640419	692533	0.81	0.00	15.65	0.00	5.60	debris	-
Contact4530	7641669	690822	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4531	7642707	689832	2.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4532	7643213	689012	2.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4533	7644914	687001	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4534	7644907	687008	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4535	7644902	687012	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4536	7644895	687018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4537	7644889	687024	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4538	7644884	687029	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4539	7644881	687034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4540	7644873	687043	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4541	7644869	687049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4542	7644862	687054	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4543	7644860	687057	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4544	7644854	687063	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4545	7644848	687069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4546	7644842	687074	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4547	7644836	687081	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4548	7644829	687089	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4549	7644825	687092	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4550	7644823	687098	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4551	7644817	687101	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4552	7644813	687105	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4553	7644808	687111	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4554	7644803	687117	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4555	7644798	687122	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4556	7644795	687124	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4557	7644790	687129	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4558	7644781	687139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4559	7644774	687147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4560	7644766	687155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4561	7644757	687164	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4562	7644751	687172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4563	7644748	687175	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4564	7644744	687180	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4565	7644739	687183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4566	7644734	687191	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4567	7644727	687198	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4568	7644724	687201	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4569	7644719	687205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4570	7644641	687274	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4571	7644632	687284	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4572	7644620	687294	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4573	7644610	687308	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4574	7644599	687318	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4575	7644583	687337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4576	7644576	687345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4577	7644569	687350	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4578	7644564	687355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4579	7644551	687370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4580	7644540	687382	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4581	7644536	687387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4582	7644525	687399	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4583	7644518	687414	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4584	7644511	687424	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4585	7644495	687432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4586	7644480	687433	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4587	7644470	687436	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4588	7644332	687609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4589	7644322	687622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4590	7644310	687619	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4591	7644310	687631	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4592	7644300	687639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4593	7644298	687646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4594	7644290	687650	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4595	7644289	687661	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4596	7644276	687666	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4597	7644271	687676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4598	7644267	687683	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4599	7644257	687685	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4600	7644254	687693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4601	7644243	687695	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4602	7644236	687700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4603	7644227	687706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4604	7644221	687708	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4605	7644207	687710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4606	7644200	687712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4607	7644192	687717	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4608	7644187	687727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4609	7644188	687735	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4610	7644181	687735	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4611	7644192	687755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4612	7644175	687745	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4613	7644160	687760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4614	7644166	687769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4615	7644161	687778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4616	7644150	687776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4617	7644144	687782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4618	7644141	687793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4619	7644136	687796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4620	7644132	687804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4621	7644122	687810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4622	7644113	687817	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4623	7644107	687820	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4624	7644102	687825	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4625	7644087	687827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4626	7644086	687838	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4627	7644081	687844	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4628	7644072	687853	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4629	7644069	687868	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4630	7644060	687875	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4631	7644047	687887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4632	7644042	687908	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4633	7644022	687920	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4634	7644005	687924	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4635	7643765	688126	18.61	0.00	0.00	0.00	0.00	Dolphin	-
Contact4636	7643749	688145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4637	7643661	688269	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4638	7643655	688273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4639	7643649	688280	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4640	7643644	688286	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4641	7643639	688291	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4642	7643633	688296	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4643	7643628	688301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4644	7643621	688306	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4645	7643617	688310	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4646	7643612	688312	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4647	7643610	688316	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4648	7643608	688317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4649	7643603	688322	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4650	7643598	688328	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4651	7643596	688332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4652	7643594	688334	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4653	7643590	688336	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4654	7643582	688339	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4655	7643571	688349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4656	7643563	688359	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4657	7643556	688367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4658	7643550	688373	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4659	7643547	688377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4660	7643544	688379	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4661	7643538	688385	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4662	7643536	688388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4663	7643532	688390	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4664	7643525	688395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4665	7643517	688404	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4666	7643512	688410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4667	7643502	688420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4668	7643498	688423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4669	7643492	688431	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4670	7643489	688434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4671	7643481	688440	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4672	7643480	688442	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4673	7643475	688445	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4674	7643467	688453	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4675	7643464	688456	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4676	7643461	688460	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4677	7643457	688463	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4678	7643450	688470	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4679	7643443	688477	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4680	7643440	688482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4681	7643435	688486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4682	7643430	688491	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4683	7643427	688492	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4684	7643426	688495	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4685	7643420	688501	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4686	7643408	688512	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4687	7643403	688518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4688	7643400	688522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4689	7643396	688523	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4690	7643394	688524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4691	7643386	688533	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4692	7643378	688540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4693	7643380	688576	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4694	7643268	688636	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4695	7643346	688561	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4696	7643339	688568	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4697	7643332	688573	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4698	7643161	688750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4699	7643144	688763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4700	7643137	688771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4701	7643133	688774	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4702	7643130	688777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4703	7643128	688779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4704	7643124	688785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4705	7643120	688787	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4706	7643116	688792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4707	7643112	688795	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4708	7643109	688798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4709	7643101	688802	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4710	7643091	688812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4711	7643054	688824	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4712	7643044	688831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4713	7643036	688839	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4714	7643081	688826	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4715	7643059	688811	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4716	7643022	688843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4717	7643014	688853	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4718	7643010	688862	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4719	7643006	688869	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4720	7643000	688874	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4721	7642992	688883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4722	7642988	688887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4723	7642979	688895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4724	7642970	688904	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4725	7642956	688916	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4726	7642946	688925	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4727	7642939	688931	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4728	7642933	688939	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4729	7642920	688955	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4730	7642911	688961	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4731	7642906	688965	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4732	7642900	688975	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4733	7642892	688982	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4734	7642886	688988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4735	7642882	688992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4736	7642735	689120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4737	7642726	689132	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4738	7642720	689134	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4739	7642716	689138	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4740	7642704	689155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4741	7642691	689171	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4742	7642682	689179	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4743	7642637	689215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4744	7642630	689217	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4745	7642626	689223	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4746	7642621	689227	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4747	7642576	689262	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4748	7642571	689267	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4749	7642564	689273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4750	7642496	689383	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4751	7642422	689441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4752	7642400	689455	8.61	11.57	0.00	0.00	0.00	Piling	-
Contact4753	7642205	689613	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4754	7642302	689493	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4755	7642364	689476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4756	7642072	689774	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4757	7642069	689776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4758	7642067	689779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4759	7642063	689784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4760	7642059	689788	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4761	7642055	689793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4762	7642048	689799	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4763	7642024	689822	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4764	7642020	689827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4765	7642014	689831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4766	7642010	689836	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4767	7642005	689842	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4768	7642002	689846	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4769	7641997	689850	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4770	7641988	689860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4771	7641981	689868	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4772	7641973	689876	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4773	7641952	689906	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4774	7641944	689917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4775	7641939	689921	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4776	7641933	689926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4777	7641928	689930	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4778	7641923	689934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4779	7641918	689939	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4780	7641912	689947	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4781	7641904	689957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4782	7641896	689972	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4783	7641892	689979	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4784	7641888	689988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4785	7641884	689994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4786	7641880	689999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4787	7641877	690008	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4788	7641870	690009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4789	7641858	690024	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4790	7641843	690035	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4791	7641834	690049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4792	7641829	690053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4793	7641819	690060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4794	7641817	690063	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4795	7641809	690070	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4796	7641793	690089	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4797	7641787	690100	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4798	7641781	690106	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4799	7641774	690112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4800	7641767	690118	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4801	7641762	690121	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4802	7641756	690126	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4803	7641750	690130	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4804	7641742	690138	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4805	7641733	690149	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4806	7641727	690155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4807	7641723	690160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4808	7641721	690160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4809	7641724	690162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4810	7641721	690165	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4811	7641713	690172	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4812	7641708	690175	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4813	7641705	690177	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4814	7641701	690180	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4815	7641698	690183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4816	7641693	690187	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4817	7641688	690195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4818	7641679	690208	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4819	7641675	690211	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4820	7641672	690214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4821	7641669	690215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4822	7641667	690217	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4823	7641665	690218	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4824	7641664	690220	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4825	7641662	690222	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4826	7641659	690227	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4827	7641659	690230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4828	7641658	690230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4829	7641657	690230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4830	7641656	690230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4831	7641657	690230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4832	7641656	690231	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4833	7641652	690234	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4834	7641649	690236	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4835	7641645	690239	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4836	7641636	690247	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4837	7641627	690253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4838	7641619	690260	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4839	7641609	690255	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4840	7641599	690253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4841	7641589	690254	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4842	7641583	690259	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4843	7641565	690254	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4844	7641559	690250	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4845	7641546	690238	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4846	7641541	690242	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4847	7641535	690248	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4848	7641577	690317	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4849	7641571	690320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4850	7641568	690323	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4851	7641559	690332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4852	7641549	690346	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4853	7641526	690377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4854	7641379	691212	3.28	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4855	7642231	689690	3.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4856	7642384	689519	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4857	7642658	689311	1.25	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4858	7643457	688947	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact4859	7644072	688305	7.39	0.00	10.27	0.00	2.14	debris	-
Contact4860	7644392	687908	52.71	0.00	5.25	0.00	1.68	debris	-
Contact4861	7644887	687435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4862	7644901	687327	118.38	38.64	0.00	0.00	0.00	wreck	?

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4863	7644958	687314	29.86	0.00	8.54	0.00	3.40	debris	-
Contact4864	7645214	687086	15.84	0.00	2.89	0.00	1.23	debris	-
Contact4865	7645112	687127	2.94	0.00	0.00	0.00	0.00	debris	-
Contact4866	7645199	687012	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4867	7645209	687019	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4868	7645834	685818	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4869	7645842	685799	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4870	7645862	685732	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4871	7646088	685813	29.30	0.00	1.17	0.00	0.71	debris	-
Contact4872	7646138	685840	80.95	0.00	0.00	0.00	0.00	Piling	-
Contact4873	7645900	685684	73.66	0.00	0.00	0.00	0.00	Piling	-
Contact4874	7645826	685828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4875	7645805	685866	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4876	7645792	685891	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4877	7645784	685909	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4878	7645765	685945	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4879	7645791	686004	34.94	0.00	3.11	0.00	1.68	debris	-
Contact4880	7645757	685952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4881	7645750	685967	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4882	7645736	685992	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4883	7645728	686011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4884	7645709	686045	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4885	7645701	686059	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4886	7645696	686070	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4887	7645689	686077	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4888	7645677	686100	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4889	7645641	686166	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4890	7645672	686113	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4891	7645598	686223	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4892	7645585	686238	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4893	7642971	689435	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact4894	7616538	717241	4.14	0.00	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact4895	7616358	716675	46.21	0.00	0.00	0.00	0.00	Dolphin	-
Contact4896	7616431	716496	35.70	0.00	0.00	0.00	0.00	Dolphin	-
Contact4897	7616368	716650	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4898	7616370	716639	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4899	7616391	716608	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4900	7616394	716604	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4901	7616395	716601	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4902	7616396	716597	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4903	7616397	716594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4904	7616402	716583	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4905	7616405	716577	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4906	7616409	716571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4907	7616410	716567	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4908	7616411	716562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4909	7616416	716528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4910	7616418	716515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4911	7616410	716533	28.28	0.00	44.03	0.00	8.34	Structure	-
Contact4912	7616501	716740	5.27	0.00	2.81	0.00	1.81	debris	-
Contact4913	7616494	716423	0.77	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4914	7616438	716567	2.92	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4915	7616495	716635	1.64	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4916	7616472	716631	0.74	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4917	7616502	716690	1.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4918	7616473	716783	2.20	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4919	7617071	715921	11.71	0.00	0.00	0.00	0.00	Log	-
Contact4920	7616452	716406	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4921	7616454	716404	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4922	7616458	716391	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4923	7616461	716381	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4924	7616465	716376	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4925	7616469	716364	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4926	7616474	716354	0.00	0.00	0.00	0.00	0.00	debris	-
Contact4927	7616489	716348	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4928	7616548	716160	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4929	7616533	716147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4930	7616530	716159	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4931	7616513	716153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4932	7616594	716012	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4933	7616596	716003	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4934	7616544	716205	3.21	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4935	7616548	716190	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4936	7616552	716182	1.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4937	7616557	716171	0.90	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4938	7616538	716190	2.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4939	7616541	716184	0.75	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4940	7616527	716189	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4941	7616533	716179	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4942	7616514	716177	12.76	0.00	19.27	0.00	3.75	Structure	-
Contact4943	7616527	716153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4944	7616526	716158	0.00	0.00	0.00	0.00	0.00	Log	-
Contact4945	7616531	716147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4946	7616835	716116	2.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4947	7616688	716139	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4948	7616616	716282	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact4949	7616638	716208	38.27	0.00	3.15	0.00	1.46	debris	-
Contact4950	7616792	716249	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4951	7616636	716088	4.73	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4952	7616704	716042	1.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4953	7616755	715923	3.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4954	7617062	715516	11.30	0.00	0.00	0.00	0.00	Gravel	-
Contact4955	7616713	715508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4956	7616697	715543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4957	7616737	715616	1.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4958	7616766	715630	1.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4959	7616747	715671	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact4960	7616653	715802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4961	7616666	715757	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4962	7616684	715719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4963	7616691	715686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4964	7616706	715652	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact4965	7616716	715616	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4966	7616646	715832	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4967	7616625	715871	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4968	7616960	715834	2.62	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4969	7616885	716160	1.82	0.00	1.03	0.00	0.42	debris	-
Contact4970	7616938	716059	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact4971	7616943	715975	3.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4972	7616843	716089	0.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4973	7617226	715515	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact4974	7616971	715091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4975	7617088	714840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4975	7617088	714840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4976	7616988	715055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4977	7616993	715042	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4978	7616998	715030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4979	7617001	715023	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4980	7617025	714986	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4981	7617024	714976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4982	7617032	714961	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4983	7617036	714952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4984	7617038	714948	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4985	7617041	714943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4986	7617049	714929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4987	7617079	714856	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4989	7617073	714847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4990	7617080	714844	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4991	7617094	714824	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4992	7617374	714950	4.24	0.00	4.89	0.00	1.76	debris	-
Contact4993	7617100	714811	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4994	7617101	714809	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4995	7617102	714804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4996	7617103	714801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4997	7617104	714797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4998	7617104	714790	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact4999	7617114	714767	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5000	7617116	714761	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5001	7617121	714755	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5002	7617124	714746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5003	7617130	714733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5004	7617129	714732	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5005	7617133	714722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5006	7617135	714714	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5007	7617138	714706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5008	7617140	714702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5009	7617147	714686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5010	7617153	714675	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5011	7617153	714670	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5012	7617156	714661	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5013	7617158	714656	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5014	7617159	714651	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5015	7617163	714634	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5016	7617173	714610	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5017	7617645	714596	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5018	7617314	714500	1.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5019	7617171	714565	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5020	7617162	714583	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5021	7617163	714592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5022	7617202	714517	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5023	7617210	714489	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5024	7617587	714725	25.08	0.00	12.71	0.00	2.51	debris	-
Contact5025	7617605	714691	5.82	21.75	9.86	0.00	1.74	debris	-
Contact5026	7617588	714666	3.36	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5027	7617585	714691	45.54	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5028	7617254	714453	0.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5029	7617255	714393	5.37	0.00	9.85	0.00	2.21	debris	-
Contact5030	7617730	714519	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5031	7617791	714346	14.40	0.00	3.83	0.00	0.57	debris	-
Contact5032	7617778	714380	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5033	7617737	714390	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5034	7617517	714590	3.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5035	7617581	714666	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5036	7617482	714545	1.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5037	7617279	714473	6.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5038	7617389	714384	1.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5039	7617772	714281	52.04	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5040	7617833	714281	3.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5041	7617753	713412	29.05	2.30	9.59	0.00	2.40	debris	-
Contact5042	7617734	713484	7.88	0.00	13.55	0.00	3.51	debris	-
Contact5043	7617703	713465	2.06	0.00	3.54	0.00	0.80	debris	-
Contact5044	7617863	713168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5045	7617843	713161	32.62	0.00	0.00	0.00	0.00	Piling	-
Contact5046	7617869	713159	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5047	7617872	713154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5048	7617881	713141	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5049	7617891	713120	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5050	7617840	713111	3.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5051	7617860	713099	3.24	0.00	0.00	0.00	0.00	debris	-
Contact5052	7617922	713284	1.99	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5053	7617910	713081	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5054	7617919	713059	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5055	7617921	713051	3.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5056	7617926	713046	1.64	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5057	7617931	713045	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5058	7617955	712990	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5059	7617966	712966	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5060	7617972	712947	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5061	7617997	712894	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5062	7618010	712867	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5063	7618018	712851	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5064	7618022	712843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5065	7618026	712840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5066	7618029	712835	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5067	7618033	712823	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5068	7618044	712825	3.82	0.00	4.01	0.00	0.95	debris	-
Contact5069	7618048	712805	6.15	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5070	7618047	712782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5071	7618050	712776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5072	7618052	712770	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5073	7618057	712762	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5074	7618060	712756	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5075	7618063	712749	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5076	7618076	712718	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5077	7618079	712714	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5078	7618088	712694	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5079	7618089	712693	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5080	7618090	712692	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5081	7618092	712688	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5082	7618100	712674	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5083	7618102	712671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5084	7618112	712633	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5085	7618117	712625	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5086	7618118	712618	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5087	7618132	712592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5088	7618135	712586	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5089	7618186	712481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5090	7618158	712532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5091	7618167	712510	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5092	7618173	712500	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5093	7618188	712466	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5094	7618192	712459	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5095	7618202	712435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5096	7618204	712430	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5097	7618207	712426	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5098	7618209	712419	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5099	7618223	712395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5100	7618234	712361	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5101	7618228	712379	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5102	7618266	712321	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5103	7618444	711971	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5104	7618462	711931	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5105	7618470	711923	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5106	7618470	711918	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5107	7618478	711904	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5108	7618673	711632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5109	7618657	711626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5110	7618612	711606	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5111	7618882	711283	51.76	0.00	0.00	0.00	0.00	Dolphin	-
Contact5112	7619033	710990	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5113	7618984	711056	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5114	7618973	711092	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5115	7618938	711141	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5116	7619053	710946	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5117	7619054	710942	0.00	0.00	0.00	0.00	0.00	Piling	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5118	7619056	710938	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5119	7618268	712459	5.69	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5120	7618329	712447	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5121	7618381	712407	3.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5122	7618390	712379	3.72	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5123	7618331	712337	5.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5124	7618596	712502	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact5125	7618658	712353	8.33	0.00	3.51	0.00	1.46	Debris	-
Contact5126	7618652	712308	2.51	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5127	7618665	712289	2.36	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5128	7618826	712365	51.47	0.00	5.29	0.00	0.95	Anchor Drag	-
Contact5129	7618672	712629	23.13	12.86	1.76	0.00	0.32	debris	-
Contact5130	7618659	712683	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5131	7618427	712333	1.03	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5132	7618308	712280	4.83	0.00	0.00	0.00	0.00	debris	-
Contact5133	7618305	712271	4.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5134	7618292	712243	4.06	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5135	7618517	712196	4.01	0.00	7.94	0.00	5.43	debris	-
Contact5136	7618512	712016	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5137	7618552	711789	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5138	7618868	711962	2.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5139	7618699	711891	1.85	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5140	7618837	711484	4.39	0.00	1.97	0.00	0.61	debris	-
Contact5141	7618754	711449	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5142	7618774	711420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5143	7618784	711555	6.29	0.00	13.37	0.00	3.82	debris	-
Contact5144	7619044	711219	2.58	0.00	26.70	0.00	10.42	Piling	Submerged
Contact5145	7619178	710847	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5150	7621347	728732	52.04	0.00	0.00	0.00	0.00	Dolphin	-
Contact5151	7621293	728652	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5152	7621262	728657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5153	7620767	728255	68.19	0.00	0.00	0.00	0.00	Dolphin	-
Contact5154	7620858	728274	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5155	7620852	728267	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5156	7620841	728261	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5157	7620828	728251	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5158	7620816	728240	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5159	7620770	728226	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5160	7620761	728217	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5161	7620745	728210	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5162	7620726	728188	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5163	7620653	728156	64.82	0.00	0.00	0.00	0.00	Dolphin	-
Contact5164	7620605	728305	17.51	0.00	8.93	0.00	6.31	Piling	Submerged
Contact5165	7620513	728248	18.01	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5166	7620576	728045	0.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5167	7620347	727914	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5168	7620312	727891	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5169	7620287	727859	41.04	0.00	0.00	0.00	0.00	Dolphin	-
Contact5170	7620333	727914	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5171	7620324	727908	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5172	7620318	727905	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5173	7617936	716734	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5174	7617914	716787	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5175	7617926	717021	63.50	0.00	0.00	0.00	0.00	Structure	-
Contact5176	7617957	716943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5177	7617971	716941	2.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5178	7617583	717636	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5179	7617533	717699	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5180	7617402	717829	42.70	0.00	0.00	0.00	0.00	Dolphin	-
Contact5181	7617414	717882	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5182	7617387	717933	52.01	0.00	0.00	0.00	0.00	Piling	-
Contact5183	7617363	717981	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5184	7617352	718021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5185	7617329	718264	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5186	7617192	718426	51.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact5187	7617130	718555	134.17	0.00	0.00	0.00	0.00	Dolphin	-
Contact5188	7617085	718655	52.02	0.00	0.00	0.00	0.00	Dolphin	-
Contact5189	7616950	719367	17.92	0.00	0.00	0.00	0.00	Piling	Scoured In
Contact5190	7616850	719105	43.63	0.00	4.76	0.00	1.58	Log	-
Contact5191	7616935	719533	34.86	0.00	0.00	0.00	0.00	Dolphin	-
Contact5192	7616923	719611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5193	7616906	719750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5194	7616899	719814	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5195	7616849	719797	20.54	0.00	3.56	0.00	1.36	debris	-
Contact5196	7616624	719643	29.27	25.72	16.04	0.00	7.46	debris	-
Contact5197	7616610	719753	39.35	0.00	0.00	0.00	0.00	Log	-
Contact5198	7616889	719883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5199	7616882	719946	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5200	7616893	719980	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5201	7616869	720033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5202	7616852	720110	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5203	7616848	720147	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5204	7616843	720155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5205	7616839	720170	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5206	7616839	720179	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5207	7616839	720190	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5208	7616785	720317	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5209	7616797	720255	24.07	0.00	13.97	0.00	6.62	Piling	Submerged
Contact5210	7616755	720428	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact5211	7616823	720497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5212	7616820	720506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5213	7616822	720540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5214	7616817	720599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5215	7616574	720666	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5216	7616824	720206	41.43	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact5217	7616831	720246	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5218	7616836	720264	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5219	7616833	720292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5220	7616834	720309	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5221	7616833	720320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5222	7616831	720349	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5223	7616832	720360	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5224	7616830	720367	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5225	7616827	720427	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5226	7616827	720436	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5227	7616816	720667	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5228	7616815	720675	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5229	7616816	720706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5230	7616816	720716	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5231	7616814	720747	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5232	7616812	720788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5233	7616608	720872	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5234	7616806	720808	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5235	7616809	720840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5236	7616808	720854	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5237	7616805	720869	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5238	7616806	720883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5239	7616804	720889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5240	7616803	720898	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5241	7616803	720912	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5242	7616804	720926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5243	7616803	720933	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5244	7616802	720949	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5245	7616803	720968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5246	7616802	720976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5247	7616800	720984	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5248	7616801	720989	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5249	7616801	720999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5250	7616800	721009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5251	7616800	721018	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5252	7616801	721029	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5253	7616799	721033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5254	7616798	721039	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5255	7616798	721062	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5256	7616808	721054	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5257	7616815	721060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5258	7616826	721064	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5259	7616798	721098	26.69	0.00	0.00	0.00	0.00	Dolphin	-
Contact5260	7616827	721330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5261	7616791	721371	20.56	0.00	0.00	0.00	0.00	Piling	-
Contact5262	7616793	721424	24.53	0.00	0.00	0.00	0.00	Piling	-
Contact5263	7616794	721478	34.68	0.00	0.00	0.00	0.00	Piling	-
Contact5264	7616797	721527	14.80	0.00	0.00	0.00	0.00	Piling	-
Contact5265	7616792	721597	8.52	0.00	0.00	0.00	0.00	Piling	-
Contact5266	7616836	721640	14.71	0.00	18.59	0.00	8.71	debris	-
Contact5267	7616732	721887	39.19	0.00	0.00	0.00	0.00	Dolphin	-
Contact5268	7616742	721929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5269	7616748	721969	13.64	0.00	0.00	0.00	0.00	Piling	-
Contact5270	7616750	722006	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5271	7616755	722058	14.57	0.00	0.00	0.00	0.00	Piling	-
Contact5272	7616777	722136	68.20	0.00	0.00	0.00	0.00	Dolphin	-
Contact5273	7616792	722237	57.88	0.00	0.00	0.00	0.00	Dolphin	-
Contact5274	7616803	722337	66.71	0.00	0.00	0.00	0.00	Dolphin	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5275	7616785	722183	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5276	7616822	722428	110.51	0.00	0.00	0.00	0.00	Dolphin	-
Contact5277	7616837	722486	43.15	0.00	0.00	0.00	0.00	Dolphin	-
Contact5278	7616846	722584	27.04	0.00	0.00	0.00	0.00	Dolphin	-
Contact5279	7616807	722397	20.38	0.00	0.00	0.00	0.00	Piling	-
Contact5280	7616859	722714	96.52	180.75	0.00	0.00	0.00	Structure	-
Contact5281	7616886	722833	53.69	0.00	0.00	0.00	0.00	Dolphin	-
Contact5282	7616899	722932	52.70	0.00	0.00	0.00	0.00	Dolphin	-
Contact5283	7616904	723028	21.31	0.00	0.00	0.00	0.00	Dolphin	-
Contact5284	7617040	723261	17.96	0.00	46.96	0.00	13.84	Piling	Submerged
Contact5285	7617011	723460	71.32	0.00	0.00	0.00	0.00	Dolphin	-
Contact5286	7617081	723599	91.35	0.00	0.00	0.00	0.00	Dolphin	-
Contact5287	7617114	723654	32.70	0.00	0.00	0.00	0.00	Dolphin	-
Contact5288	7617158	723779	101.56	0.00	0.00	0.00	0.00	Dolphin	-
Contact5289	7617187	723843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5290	7617180	723828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5291	7617267	723824	20.13	36.79	1.72	0.00	0.59	debris	-
Contact5292	7617193	723875	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5293	7617216	723895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5294	7617229	723921	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5295	7617243	723972	101.47	96.23	0.00	0.00	0.00	Dolphin	-
Contact5296	7617291	724001	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5297	7617341	724129	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5298	7617437	724202	0.00	0.00	57.73	0.00	13.50	Piling	Submerged
Contact5299	7617433	724335	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5300	7617493	724455	29.64	0.00	0.00	0.00	0.00	debris	-
Contact5301	7617501	724369	11.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5302	7617596	724586	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5303	7617569	724608	0.00	0.00	16.69	0.00	13.90	Piling	Submerged
Contact5304	7617656	724689	0.00	0.00	30.23	0.00	20.19	Piling	-
Contact5305	7617674	724741	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5306	7617691	724783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5307	7617804	724952	0.00	0.00	0.00	0.00	4.42	aluated & Dismiss	-
Contact5308	7617711	724830	0.98	0.00	0.00	0.00	0.00	Piling	-
Contact5309	7617735	724875	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact5310	7617742	724898	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5311	7617753	724902	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5312	7617764	724896	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5313	7617970	725186	24.14	0.00	4.87	0.00	1.11	Log	-
Contact5314	7618013	725318	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5315	7618034	725405	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5316	7618069	725458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5317	7618100	725509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5318	7618129	725563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5319	7618158	725608	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5320	7618125	725528	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5321	7618125	725512	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5322	7618196	725671	10.09	0.00	0.00	0.00	0.00	Piling	-
Contact5323	7618309	725801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5324	7618314	725722	4.62	0.00	20.48	0.00	8.84	debris	-
Contact5325	7618351	725837	2.17	0.00	0.00	0.00	0.00	debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5326	7618400	725889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5327	7618419	725879	4.67	0.00	8.82	0.00	3.15	debris	-
Contact5328	7618465	725959	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5329	7618464	725951	1.16	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5330	7618379	725987	32.24	0.00	0.00	0.00	0.00	Log	-
Contact5331	7618395	726011	2.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5332	7618703	726237	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5333	7618759	726305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5334	7618804	726362	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5335	7618830	726488	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5336	7618879	726544	18.77	0.00	1.54	0.00	0.93	debris	-
Contact5337	7618909	726518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5338	7618951	726556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5339	7618914	726598	28.81	0.00	0.00	0.00	0.00	Piling	Scoured In
Contact5340	7618953	726648	9.53	0.00	18.51	0.00	21.65	Piling	Submerged
Contact5341	7619002	726605	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5342	7618982	726679	9.90	0.00	8.54	0.00	5.87	debris	-
Contact5343	7618837	726672	69.23	0.00	0.00	0.00	0.00	Log	-
Contact5344	7619080	726816	44.75	0.00	0.00	0.00	0.00	Dolphin	-
Contact5345	7619130	726878	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5346	7619114	726849	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5347	7619128	726928	30.44	0.00	0.00	0.00	0.00	Piling	-
Contact5348	7619136	726889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5349	7619156	726884	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5350	7619126	726892	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5351	7619138	726941	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5352	7619159	726944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5353	7619170	726951	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5354	7619184	726964	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5355	7619194	726972	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5356	7619206	726976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5357	7619213	726985	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5358	7619240	727005	40.15	36.00	0.00	0.00	0.00	Dolphin	-
Contact5359	7619245	727021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5360	7619627	727303	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5361	7619654	727324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5362	7619650	727329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5363	7619667	727337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5364	7619683	727352	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5365	7619690	727387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5366	7619735	727396	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5367	7619738	727394	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5368	7619839	727474	5.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5369	7619824	727296	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5370	7619838	727305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5371	7619920	727560	43.35	30.71	0.00	0.00	0.00	Dolphin	-
Contact5372	7619926	727551	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5373	7619913	727419	13.47	0.00	60.05	0.00	30.63	Piling	Submerged
Contact5374	7620001	727609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5375	7620071	727686	61.08	75.75	0.00	0.00	0.00	Dolphin	-
Contact5376	7620156	727771	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5377	7620181	727796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5378	7620244	727851	24.37	0.00	0.00	0.00	0.00	Piling	-
Contact5379	7620153	727772	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5380	7620161	727785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5381	7620166	727791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5382	7620192	727798	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5383	7620196	727802	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5384	7620197	727801	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5385	7620203	727807	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5386	7620207	727810	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5387	7620228	727796	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5388	7620217	727828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5389	7620222	727830	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5390	7620257	727863	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5391	7620264	727865	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5392	7620278	727861	41.56	0.00	40.30	0.00	72.73	Dolphin	-
Contact5393	7620276	727868	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5394	7620291	727878	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5395	7620297	727889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5396	7620461	727939	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5397	7620059	727900	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5398	7618696	726479	15.58	0.00	4.08	0.00	0.92	debris	-
Contact5399	7618380	726111	11.02	0.00	4.52	0.00	0.89	debris	-
Contact5400	7616677	721257	18.00	0.00	35.48	0.00	16.99	Piling	Submerged
Contact5401	7616675	721226	2.03	0.00	3.86	0.00	3.12	debris	-
Contact5402	7616463	719652	18.72	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact5403	7617107	717674	4.97	0.00	4.74	0.00	0.77	Log	-
Contact5412	7619221	710646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5413	7619298	710548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5414	7619337	710497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5415	7619364	710455	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5416	7619389	710417	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5417	7619418	710365	48.66	0.00	0.00	0.00	0.00	Piling	-
Contact5418	7619445	710320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5419	7619464	710294	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5420	7621437	708292	42.30	0.00	7.15	0.00	1.49	Log	-
Contact5421	7621424	708281	65.04	0.00	0.00	0.00	0.00	Log	-
Contact5422	7621377	708259	45.78	0.00	0.00	0.00	0.00	debris	-
Contact5423	7621331	708218	38.25	0.00	9.68	0.00	3.99	debris	-
Contact5424	7621324	708252	38.60	0.00	0.00	0.00	0.00	debris	-
Contact5425	7621316	708278	18.85	0.00	0.00	0.00	0.00	debris	-
Contact5426	7621322	708306	13.50	0.00	11.54	0.00	3.83	debris	-
Contact5427	7621304	708308	30.05	0.00	0.00	0.00	0.00	debris	-
Contact5428	7621239	708350	29.33	0.00	0.00	0.00	0.00	debris	-
Contact5429	7621176	708405	33.85	0.00	0.00	0.00	0.00	debris	-
Contact5430	7621234	708435	12.65	0.00	3.10	0.00	1.15	debris	-
Contact5431	7621178	708445	33.46	0.00	2.91	0.00	1.40	debris	-
Contact5432	7621200	708469	23.99	0.00	1.15	0.00	0.48	debris	-
Contact5433	7621110	708486	23.61	0.00	7.98	0.00	5.44	debris	-
Contact5434	7621106	708499	61.00	0.00	0.00	0.00	0.00	debris	-
Contact5435	7621292	707954	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5436	7621225	707967	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5437	7621087	708243	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5438	7621078	708246	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5439	7621055	708292	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5440	7621017	708353	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5441	7620975	708401	26.04	0.00	0.00	0.00	0.00	Dolphin	-
Contact5442	7620893	708492	11.27	0.00	0.00	0.00	0.00	Piling	-
Contact5443	7620810	708591	12.60	0.00	0.00	0.00	0.00	Piling	-
Contact5444	7620790	708605	13.22	0.00	0.00	0.00	0.00	Piling	-
Contact5445	7620729	708695	22.20	0.00	0.00	0.00	0.00	Piling	-
Contact5446	7620451	709046	65.54	0.00	0.00	0.00	0.00	Dolphin	-
Contact5447	7620429	709086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5448	7620395	709110	42.95	0.00	0.00	0.00	0.00	Dolphin	-
Contact5449	7620359	709150	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5450	7620323	709204	44.42	0.00	0.00	0.00	0.00	Dolphin	-
Contact5451	7620282	709240	53.29	0.00	0.00	0.00	0.00	Dolphin	-
Contact5452	7620303	709215	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5453	7619639	710005	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact5454	7619628	710016	0.00	0.00	27.10	0.00	11.23	Piling	Submerged
Contact5455	7619616	710022	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact5456	7619489	710213	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5457	7619491	710219	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5458	7619488	710230	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5459	7619488	710244	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5460	7619475	710268	40.47	0.00	0.00	0.00	0.00	Dolphin	-
Contact5461	7619433	710340	39.42	0.00	0.00	0.00	0.00	Dolphin	-
Contact5462	7619391	710400	23.68	0.00	0.00	0.00	0.00	Dolphin	-
Contact5463	7619369	710441	25.08	0.00	0.00	0.00	0.00	Dolphin	-
Contact5464	7619347	710481	25.91	0.00	0.00	0.00	0.00	Dolphin	-
Contact5465	7619310	710525	37.98	0.00	0.00	0.00	0.00	Dolphin	-
Contact5466	7619235	710629	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5467	7619278	710527	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5468	7619273	710535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5469	7619264	710544	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5470	7619261	710552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5471	7619253	710564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5472	7619247	710571	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5473	7619244	710578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5474	7619237	710590	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5475	7619230	710600	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5476	7619223	710607	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5477	7619207	710626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5478	7619195	710637	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5479	7619180	710649	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5480	7619159	710651	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5481	7619297	710497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5482	7619305	710486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5483	7619310	710474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5484	7619348	710458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5485	7619354	710450	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5486	7619366	710416	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5487	7619372	710413	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5488	7619376	710409	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5489	7619380	710370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5490	7619384	710363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5491	7619392	710352	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5492	7619398	710341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5493	7619130	710798	36.50	0.00	0.00	0.00	0.00	Piling	-
Contact5494	7619114	710812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5495	7619103	710828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5496	7619101	710852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5497	7619090	710868	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5498	7619077	710884	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5499	7619068	710900	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5500	7619057	710917	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5501	7619048	710936	33.81	0.00	0.00	0.00	0.00	Dolphin	-
Contact5502	7619031	710963	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5503	7619010	711005	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5504	7619022	710979	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5505	7618996	711026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5506	7618987	711044	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5507	7618973	711068	32.27	0.00	0.00	0.00	0.00	Dolphin	-
Contact5508	7618954	711094	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5509	7618943	711112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5510	7618933	711127	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5511	7618932	711126	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5512	7618854	711261	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5513	7618764	711299	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5514	7618841	711306	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5515	7618727	711413	22.39	44.04	0.00	0.00	0.00	Debris - NMH	-
Contact5516	7618722	711411	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5517	7618704	711403	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5518	7618895	711208	37.66	0.00	0.00	0.00	0.00	Depression	-
Contact5519	7618904	711182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5520	7618914	711161	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5521	7618923	711144	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5522	7619547	710054	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5523	7619451	710181	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5524	7621299	708177	11.72	3.11	5.31	0.00	4.29	debris	-
Contact5525	7620543	709374	18.12	0.00	10.17	0.00	1.97	debris	-
Contact5526	7620591	709355	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5527	7620643	709283	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5528	7620620	709323	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5529	7620433	709230	22.11	0.00	2.34	0.00	2.02	debris	-
Contact5530	7620390	709315	4.07	0.00	2.43	0.00	1.48	debris	-
Contact5531	7620626	709057	28.80	0.00	0.00	0.00	0.00	debris	-
Contact5532	7620670	709023	44.29	0.00	2.47	0.00	0.90	debris	-
Contact5533	7620671	709019	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5534	7620835	708555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5535	7620855	708525	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5536	7620928	708445	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5537	7621054	708314	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5538	7619662	709976	1.90	0.00	10.54	0.00	8.33	Piling	Submerged
Contact5539	7619838	709782	1.76	0.00	7.84	0.00	3.52	Piling	Submerged
Contact5540	7619809	709803	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5541	7619851	709758	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5542	7620628	708677	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5543	7644206	689271	81.75	15.27	0.00	0.00	0.00	Dolphin	-
Contact5544	7643163	690190	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5545	7643202	690116	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5546	7643221	690100	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5547	7643226	690096	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5548	7643233	690086	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5549	7643250	690076	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5550	7643278	690055	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5551	7643295	690037	0.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5552	7643308	690024	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5553	7643334	690012	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5554	7643357	689991	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5555	7643488	689903	0.00	0.00	11.55	0.00	3.95	Piling	-
Contact5556	7643724	689721	17.20	0.00	0.00	0.00	0.00	Piling	-
Contact5557	7643720	689727	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5558	7643668	689751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5559	7643642	689771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5560	7643524	689890	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5561	7643624	689798	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5562	7643598	689819	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5563	7643573	689840	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5564	7643593	689743	6.88	0.00	2.69	0.00	1.40	debris	-
Contact5565	7643139	690221	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact5566	7642638	690683	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5567	7642640	690547	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact5568	7642641	690658	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact5569	7642678	690671	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5570	7642680	690668	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5571	7642436	690912	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5572	7642374	691007	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5573	7642358	691058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5574	7642276	691129	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5575	7642274	691153	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5576	7642276	691143	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5577	7642244	691192	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5578	7642236	691203	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5579	7642224	691218	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5580	7642215	691224	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5581	7642204	691236	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5582	7642197	691252	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5583	7642190	691265	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5584	7642184	691268	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5585	7642180	691276	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5586	7642172	691287	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5587	7642169	691293	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5588	7642111	691356	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5589	7642109	691361	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5590	7642154	691300	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5591	7642146	691311	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5592	7642139	691320	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5593	7642131	691329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5594	7642118	691347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5595	7642101	691370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5596	7642097	691376	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5597	7642080	691398	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5598	7642075	691404	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5599	7642070	691407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5600	7642051	691423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5601	7642050	691426	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5602	7642042	691440	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5603	7642012	691479	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5604	7642008	691485	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5605	7642003	691489	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5606	7642000	691495	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5607	7641995	691500	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5608	7641991	691506	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5609	7641985	691515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5610	7641982	691519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5611	7641973	691530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5612	7641963	691540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5613	7641955	691552	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5614	7642126	691456	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5615	7642206	691356	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5616	7642034	691461	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5617	7642059	691284	39.02	0.00	0.00	0.00	0.00	Piling	-
Contact5618	7641376	692184	23.55	0.00	4.42	0.00	1.38	Log	-
Contact5619	7641536	692040	23.41	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact5620	7641748	691730	5.36	0.00	0.00	0.00	0.00	debris	-
Contact5621	7642019	691432	1.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5622	7641783	691177	16.85	0.00	5.24	0.00	1.41	debris	-
Contact5623	7642388	691107	11.01	0.00	13.86	0.00	3.01	debris	-
Contact5624	7642416	690383	20.10	0.00	2.56	0.00	0.69	Log	-
Contact5625	7642663	690633	11.33	2.30	1.28	0.00	0.43	debris	-
Contact5626	7642601	690619	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5627	7643061	689761	2.51	0.00	1.94	0.00	0.44	debris	-
Contact5628	7644444	689158	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5629	7644507	689087	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5630	7644548	689029	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5631	7644341	689172	1.37	0.00	35.66	0.00	10.92	Piling	Submerged
Contact5632	7644585	688962	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5633	7644606	688932	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5634	7644628	688896	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5635	7644644	688869	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5636	7644654	688857	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5637	7644671	688834	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5638	7644730	688723	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5639	7644682	688806	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5640	7644715	688755	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5641	7644792	688630	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5642	7644816	688590	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5643	7644834	688563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5644	7644872	688340	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5645	7644932	688145	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5646	7644902	688208	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5647	7644941	688247	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5648	7645100	687893	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5649	7645140	687893	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5650	7645158	687797	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5651	7645072	687606	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5652	7645132	687519	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5653	7645313	687568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5654	7645203	687058	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5655	7645836	686880	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5656	7645843	686861	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5657	7640780	692534	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5658	7640311	693589	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5659	7639402	694998	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5660	7639194	695155	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5661	7639095	695351	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5662	7639133	695311	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5663	7639158	695319	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5664	7639159	695305	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5665	7639185	695324	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5666	7638838	695495	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5667	7638858	695286	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5668	7638619	695587	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5669	7638786	695549	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5670	7638818	695539	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5671	7638801	695513	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5672	7638666	695346	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5673	7637246	696296	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5674	7637195	696230	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5675	7637767	695929	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5676	7638509	695638	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5677	7638080	695743	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5678	7635610	696866	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5679	7635632	696989	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5680	7635000	697677	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5681	7634647	698047	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5682	7634538	698067	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5683	7634503	698158	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5684	7634683	697989	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5685	7634456	698046	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5686	7634460	698075	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5687	7634405	698097	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5688	7634237	698305	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5689	7633972	698444	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5690	7633740	698746	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5691	7633723	698761	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5692	7633715	698766	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5693	7633704	698774	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5694	7633677	698795	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5695	7633654	698810	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5696	7633621	698832	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5697	7633596	698862	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5698	7633590	698870	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5699	7633575	698904	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5700	7633511	698953	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5701	7633503	698959	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5702	7633448	698997	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5703	7633362	699079	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5704	7633354	699089	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5705	7633326	699110	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5706	7633319	699116	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5707	7633304	699125	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5708	7633297	699132	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5709	7633195	699221	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5710	7633215	699203	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5711	7633022	699344	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5712	7633015	699353	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5713	7632984	699376	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5714	7632965	699391	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5715	7632959	699397	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5716	7632945	699406	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5717	7632933	699416	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5718	7632911	699433	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5719	7632895	699445	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5720	7632886	699454	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5721	7632875	699463	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5722	7632866	699470	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5723	7632847	699481	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5724	7632839	699490	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5725	7632828	699500	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5726	7632814	699510	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5727	7632803	699517	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5728	7632787	699531	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5729	7632757	699557	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5730	7632743	699566	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5731	7632724	699580	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5732	7632695	699603	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5733	7632683	699615	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5734	7632660	699631	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5735	7632651	699639	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5736	7632624	699660	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5737	7632616	699666	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5738	7632593	699685	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5739	7632586	699691	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5740	7632549	699722	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5741	7632540	699727	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5742	7632534	699733	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5743	7632503	699757	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5744	7632492	699765	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5745	7632482	699773	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5746	7632432	699806	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5747	7632428	699811	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5748	7632426	699812	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5749	7632408	699831	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5750	7632709	699436	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5751	7632716	699485	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5752	7632814	699420	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5753	7633004	699325	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5754	7633167	699225	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5755	7633121	699266	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5756	7633117	699270	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5757	7633098	699287	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5758	7633088	699296	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5759	7633073	699307	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5760	7633068	699311	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5761	7633063	699314	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5762	7633056	699319	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5763	7633282	699140	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5764	7633256	699159	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5765	7633136	698725	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5766	7633412	699044	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5767	7633433	699027	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5768	7633471	698996	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5769	7632458	700635	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5770	7632434	700650	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5771	7632479	700610	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5772	7632444	700561	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5773	7632426	700557	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5774	7632403	700566	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5775	7632357	700543	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5776	7632391	700498	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5777	7632423	700454	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5778	7632338	700416	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5779	7632368	700397	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5780	7632375	700376	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5781	7632333	700350	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5782	7632352	700237	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5783	7632347	700226	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5784	7632347	700206	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5785	7632311	700130	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5786	7632300	700142	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5787	7632289	700167	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5788	7631688	700609	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5789	7631698	700607	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5790	7631700	700604	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5791	7631710	700612	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5792	7631720	700604	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5793	7631737	700591	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5794	7631742	700586	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5795	7631751	700579	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5796	7631755	700577	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5797	7631761	700573	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5798	7631773	700563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5799	7631785	700556	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5800	7631814	700528	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5801	7631819	700523	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5802	7631846	700504	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5803	7631860	700495	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5804	7631864	700490	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5805	7631873	700484	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5806	7631883	700472	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5807	7631892	700466	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5808	7631892	700468	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5809	7631899	700457	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5810	7631905	700457	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5811	7631909	700454	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5812	7631920	700445	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5813	7631928	700439	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5814	7631930	700437	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5815	7631933	700434	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5816	7631940	700430	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5817	7631946	700427	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5818	7631961	700409	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5819	7631968	700406	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5820	7631975	700403	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5821	7631983	700396	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5822	7631988	700384	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5823	7632001	700377	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5824	7632018	700368	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5825	7632029	700361	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5826	7632031	700353	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5827	7632046	700347	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5828	7632054	700342	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5829	7632059	700333	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5830	7632068	700330	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5831	7632073	700328	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5832	7632076	700322	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5833	7632081	700317	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5834	7632087	700314	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5835	7632096	700312	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5836	7632101	700306	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5837	7632104	700298	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5838	7632113	700293	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5839	7632121	700289	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5840	7632131	700275	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5841	7632138	700269	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5842	7632149	700264	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5843	7632157	700259	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5844	7632179	700246	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5845	7632188	700241	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5846	7632268	700241	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5847	7631958	697632	10.72	4.20	2.07	0.00	0.54	debris	-
Contact5848	7632360	697782	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5849	7632301	697774	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5850	7632120	697793	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5851	7631910	697713	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5852	7631904	697729	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5853	7631970	697567	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5854	7631959	697533	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5855	7631943	697509	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5856	7631906	697458	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5857	7631926	697418	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5858	7631904	697385	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5859	7632045	697364	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5860	7632049	697365	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5861	7632052	697368	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5862	7632055	697370	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5863	7632058	697374	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5864	7632066	697391	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5865	7632068	697399	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5866	7632076	697410	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5867	7632080	697418	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5868	7632086	697430	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5869	7632090	697436	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5870	7632095	697439	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5871	7632101	697456	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5872	7632105	697464	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5873	7632109	697468	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5874	7632115	697473	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5875	7632122	697490	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5876	7632125	697496	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5877	7632112	697472	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5878	7632120	697489	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5879	7632124	697496	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5880	7632129	697504	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5881	7632135	697510	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5882	7632142	697517	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5883	7632146	697531	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5884	7632150	697542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5885	7632157	697556	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5886	7632163	697558	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5887	7632167	697560	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5888	7632171	697563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5889	7632177	697586	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5890	7632187	697600	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5891	7632192	697602	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5892	7632197	697606	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5893	7632202	697613	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5894	7632207	697641	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5895	7632213	697645	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5896	7632219	697653	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5897	7632222	697659	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5898	7632229	697662	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5899	7632230	697685	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5900	7632236	697697	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5901	7632240	697711	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5902	7632247	697717	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5903	7632252	697719	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5904	7632254	697723	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5905	7632263	697730	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5906	7632273	697728	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5907	7632280	697723	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5908	7632288	697719	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5909	7631878	697602	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact5910	7620770	729255	34.07	0.00	7.22	0.00	1.72	Log	-
Contact5911	7618785	728155	23.38	0.00	4.83	0.00	1.18	Log	-
Contact5912	7618761	727901	4.43	0.00	8.96	0.00	4.96	debris	-
Contact5913	7618539	728018	8.92	0.00	3.95	0.00	0.79	debris	-
Contact5914	7618070	727731	13.54	0.00	12.75	0.00	1.88	Gravel	-
Contact5915	7617936	727574	8.52	0.00	0.00	0.00	0.00	Gravel	-
Contact5916	7617920	727603	20.51	0.00	0.00	0.00	0.00	Gravel	-
Contact5917	7617900	727632	14.83	0.00	0.00	0.00	0.00	Gravel	-
Contact5918	7617879	727659	17.72	0.00	0.00	0.00	0.00	Gravel	-
Contact5919	7617916	727648	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact5920	7617891	727678	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact5921	7617946	727654	12.41	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5923	7617278	727221	66.52	0.00	0.00	0.00	0.00	Gravel	-
Contact5924	7616654	726003	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5925	7616200	725702	12.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5926	7616148	725593	7.82	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5927	7615707	724924	1.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5928	7615450	723980	4.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5929	7615436	723198	36.63	0.00	3.94	0.00	1.29	Log	-
Contact5930	7615392	722827	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact5931	7615390	722806	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact5932	7615397	722784	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact5933	7615802	722811	15.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5934	7615640	721964	35.70	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5935	7615322	721184	24.48	0.00	0.00	0.00	0.00	Gravel	-
Contact5936	7615177	720998	62.55	0.00	21.67	0.00	2.29	Log	-
Contact5937	7615248	720801	30.29	0.00	9.71	0.00	1.25	Log	-
Contact5938	7615208	720751	29.27	0.00	8.43	0.00	0.88	Log	-
Contact5939	7615206	720485	48.60	0.00	7.85	0.00	0.91	Log	-
Contact5940	7615221	720905	3.35	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5941	7615374	723659	25.42	0.00	10.27	0.00	2.11	Log	-
Contact5942	7615066	721134	41.51	0.00	5.35	0.00	1.36	Log	-
Contact5943	7615052	721150	33.62	0.00	0.00	0.00	0.00	Log	-
Contact5944	7615054	721025	2.06	0.00	3.17	0.00	1.06	debris	-
Contact5945	7615046	720870	4.76	0.00	3.87	0.00	1.09	debris	-
Contact5946	7615051	720865	7.26	0.00	3.49	0.00	1.09	debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5947	7615058	720861	14.50	0.00	4.61	0.00	1.67	debris	-
Contact5948	7615056	720855	1.45	0.00	4.99	0.00	1.47	debris	-
Contact5949	7615063	720842	7.83	0.00	7.03	0.00	3.11	debris	-
Contact5950	7615060	720838	6.08	0.00	0.00	0.00	0.00	debris	-
Contact5951	7615083	720839	1.58	0.00	1.85	0.00	1.17	debris	-
Contact5952	7615071	720829	5.63	0.00	2.39	0.00	1.20	debris	-
Contact5953	7615054	720822	3.09	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5954	7615032	720812	2.56	0.00	3.87	0.00	1.08	debris	-
Contact5955	7615042	720808	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5956	7615055	720805	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5957	7615046	720804	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5958	7615048	720800	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5959	7615084	720900	3.88	0.00	3.69	0.00	1.89	debris	-
Contact5960	7615088	721232	2.18	0.00	1.98	0.00	0.55	Anchor Drag	-
Contact5961	7615251	721864	24.47	3.64	9.61	0.00	3.95	debris	-
Contact5962	7615255	723002	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact5963	7616422	726436	6.62	0.00	0.00	0.00	0.00	Gravel	-
Contact5964	7616428	726447	2.68	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact5965	7616381	726450	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5966	7615231	723090	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact5967	7616029	717462	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact5968	7616039	717446	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact5969	7616098	717230	0.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact5970	7616200	716963	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5971	7616492	716222	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5972	7616489	716206	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5973	7616687	715252	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5974	7616722	715172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5975	7616727	715163	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5976	7616783	715107	3.37	0.00	10.32	0.00	1.80	debris	-
Contact5977	7616888	714989	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5978	7616903	714991	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5979	7616914	714996	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5980	7616918	714999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5981	7616932	715006	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5982	7616943	715019	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5983	7616951	715030	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5984	7616950	715042	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5985	7616941	715054	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5986	7616951	715060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5987	7616961	715065	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5988	7616972	715071	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5989	7616977	715075	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5990	7616994	715073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5991	7616986	715054	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5992	7616998	715021	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5993	7617003	715009	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5994	7617005	715001	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5995	7617007	714991	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5996	7617025	714972	12.47	0.00	0.00	0.00	0.00	Dolphin	-
Contact5997	7617041	714941	9.25	0.00	0.00	0.00	0.00	Dolphin	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact5998	7617046	714909	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact5999	7617050	714895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6000	7616471	716258	0.00	0.00	0.00	0.00	0.00	Piling	Submerged
Contact6001	7616458	716256	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6002	7616448	716327	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6003	7616540	716932	46.39	3.07	5.59	0.00	1.51	Log	-
Contact6004	7616253	716866	5.26	0.00	5.20	0.00	1.79	debris	-
Contact6005	7616254	716996	3.27	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6006	7621046	708613	60.49	0.00	0.00	0.00	0.00	Log	-
Contact6007	7621066	708629	49.25	0.00	7.72	0.00	2.66	Log	-
Contact6008	7620853	708816	0.00	0.00	0.00	0.00	0.00	Dredge Artifact	-
Contact6009	7617885	713104	5.02	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6010	7617864	713125	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6011	7618692	711594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6012	7618628	711562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6013	7618629	711540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6014	7618655	711518	7.25	18.93	14.30	0.00	4.52	debris	-
Contact6015	7618664	711511	8.66	42.44	25.76	0.00	6.18	debris	-
Contact6016	7618662	711637	4.01	0.00	7.16	0.00	3.51	debris	-
Contact6017	7618694	711399	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6018	7618677	711397	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6019	7619481	710633	23.57	3.19	0.00	0.00	0.00	Debris - NMH	-
Contact6020	7634161	696384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6021	7634164	696374	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6022	7634247	696548	1.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6023	7633814	696823	7.25	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6024	7633441	696974	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6025	7632966	697138	8.05	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6026	7632898	697090	0.00	0.00	13.84	0.00	3.22	debris	-
Contact6027	7632891	697098	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6028	7632885	697086	2.86	0.00	14.28	0.00	2.68	debris	-
Contact6029	7632881	697099	9.02	0.00	2.54	0.00	0.51	debris	-
Contact6030	7632899	697118	10.71	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6031	7632810	697076	5.93	0.00	1.86	0.00	0.29	debris	-
Contact6032	7631712	698072	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6033	7631666	698094	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6034	7631661	698098	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6035	7631652	698102	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6036	7631647	698108	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6037	7631635	698114	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6038	7631420	698197	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6039	7631422	698205	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6040	7631425	698210	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6041	7631429	698214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6042	7631439	698224	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6043	7631452	698243	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6044	7631460	698251	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6045	7631464	698259	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6046	7631473	698272	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6047	7631503	698324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6048	7631510	698335	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6049	7631515	698341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6050	7631524	698337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6051	7631528	698342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6052	7631516	698342	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6053	7631509	698345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6054	7631501	698339	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6055	7631496	698330	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6056	7631520	698196	10.99	0.00	10.27	0.00	2.03	debris	-
Contact6057	7631548	698245	3.67	0.00	0.00	0.00	0.00	debris	-
Contact6058	7631576	698285	14.89	14.07	10.63	0.00	5.01	unclassified	-
Contact6059	7631335	698432	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6060	7631173	699173	27.09	0.00	0.00	0.00	0.00	Depression	-
Contact6061	7630617	699442	21.91	8.71	6.08	0.00	4.31	debris	-
Contact6062	7630709	699848	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6063	7630561	699459	4.17	0.00	3.95	0.00	1.99	debris	-
Contact6064	7630402	699621	2.27	0.00	14.54	0.00	12.67	Depression	-
Contact6065	7628233	702154	2.08	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6066	7627147	703165	4.61	0.00	0.00	0.00	0.00	Piling	-
Contact6067	7627196	703101	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact6068	7627092	703209	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact6069	7626844	703435	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6070	7626842	703395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6071	7626923	703804	39.01	17.14	0.00	0.00	0.00	Gravel	-
Contact6072	7626896	703840	19.67	22.18	0.00	0.00	0.00	Gravel	-
Contact6073	7626003	704716	21.41	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6074	7625601	704665	2.28	0.00	6.06	0.00	3.21	debris	-
Contact6075	7625383	704874	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6076	7624761	705209	4.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6077	7624706	705521	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact6078	7623891	705641	3.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6079	7623915	705654	7.46	3.15	1.61	0.00	0.55	debris	-
Contact6080	7623928	705683	1.92	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6081	7623450	706028	0.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6082	7623430	706049	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6083	7623432	706215	1.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6084	7623195	706075	2.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6085	7622693	706482	38.67	0.00	0.00	0.00	0.00	Dolphin	-
Contact6086	7622105	707150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6087	7622077	707177	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6088	7621322	707929	1.89	0.00	0.00	0.00	0.00	debris	-
Contact6089	7628459	701092	3.28	0.00	12.66	0.00	7.94	debris	-
Contact6090	7628563	701620	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6091	7628581	701548	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6092	7628428	701384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6093	7628424	701417	10.02	0.00	15.02	0.00	0.79	debris	-
Contact6094	7628923	701460	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6095	7629044	701162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6096	7629037	701155	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6097	7629021	701146	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6098	7629003	701131	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6099	7628999	701123	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6100	7628997	701119	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6101	7628994	701118	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6102	7628994	701115	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6103	7628982	701106	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6104	7628978	701099	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6105	7628976	701097	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6106	7628967	701091	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6107	7628965	701089	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6108	7628961	701088	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6109	7628954	701088	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6110	7628948	701076	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6111	7628941	701078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6112	7628939	701069	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6113	7628931	701061	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6114	7628925	701056	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6115	7628914	701053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6116	7628909	701049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6117	7628906	701044	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6118	7628902	701042	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6119	7628900	701036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6120	7628893	701034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6121	7628888	701033	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6122	7628883	701028	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6123	7628878	701022	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6124	7628878	701019	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6125	7628878	701017	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6126	7628868	701014	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6127	7628869	701011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6128	7628865	701016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6129	7628861	701015	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6130	7628864	700994	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6131	7628854	700988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6132	7628829	700993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6133	7628831	700988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6134	7628827	700985	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6135	7628822	700983	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6136	7628820	700984	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6137	7628826	700968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6138	7628816	700958	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6139	7628804	700957	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6140	7628796	700957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6141	7628790	700951	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6142	7628787	700948	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6143	7628781	700943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6144	7628777	700939	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6145	7628769	700934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6146	7628766	700934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6147	7628763	700930	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6148	7628753	700928	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6149	7628748	700915	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6150	7628745	700912	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6151	7628736	700909	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6152	7628727	700901	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6153	7628721	700896	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6154	7628716	700890	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6155	7628715	700888	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6156	7628711	700885	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6157	7628698	700885	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6158	7628695	700882	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6159	7628696	700881	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6160	7628691	700877	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6161	7628685	700870	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6162	7628680	700860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6163	7628670	700852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6164	7628668	700851	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6165	7628661	700846	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6166	7628653	700838	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6167	7628650	700825	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6168	7628646	700818	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6169	7628639	700814	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6170	7628635	700811	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6171	7628627	700800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6172	7628618	700797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6173	7628614	700796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6174	7628610	700787	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6175	7628602	700780	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6176	7628594	700777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6177	7628584	700776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6178	7628577	700777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6179	7628564	700768	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6180	7628563	700760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6181	7628561	700754	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6182	7628558	700750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6183	7628542	700779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6184	7628531	700771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6185	7628519	700760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6186	7628516	700751	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6187	7628531	700717	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6188	7628527	700710	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6189	7628521	700701	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6190	7628515	700691	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6191	7628493	700684	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6192	7629448	700690	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6193	7629432	700673	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6194	7629424	700665	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6195	7629411	700653	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6196	7629403	700647	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6197	7629395	700640	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6198	7629381	700627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6199	7629362	700614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6200	7629355	700608	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6201	7629345	700599	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6202	7629333	700591	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6203	7629307	700568	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6204	7629277	700545	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6205	7629270	700539	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6206	7629256	700529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6207	7629246	700519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6208	7629234	700508	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6209	7629221	700497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6210	7629206	700485	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6211	7629193	700478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6212	7629183	700467	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6213	7629171	700454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6214	7629153	700441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6215	7629141	700428	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6216	7629136	700425	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6217	7629133	700423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6218	7629119	700412	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6219	7629113	700406	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6220	7629106	700401	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6221	7629096	700393	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6222	7629087	700387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6223	7629081	700383	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6224	7629074	700377	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6225	7629071	700373	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6226	7629055	700360	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6227	7629048	700356	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6228	7629065	700373	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6229	7629055	700366	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6230	7629049	700363	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6231	7629040	700347	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6232	7629035	700345	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6233	7629028	700338	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6234	7629018	700334	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6235	7629014	700328	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6236	7629013	700326	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6237	7629010	700324	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6238	7629009	700322	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6239	7629019	700329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6240	7628817	700526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6241	7628823	700528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6242	7628823	700529	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6243	7628829	700531	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6244	7628832	700536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6245	7628834	700537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6246	7628837	700536	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6247	7628842	700541	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6248	7628847	700545	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6249	7628852	700550	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6250	7628861	700558	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6251	7628864	700563	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6252	7628868	700564	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6253	7628874	700565	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6254	7628878	700569	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6255	7628886	700578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6256	7628896	700588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6257	7628899	700588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6258	7628902	700593	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6259	7628908	700594	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6260	7628909	700599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6261	7628919	700606	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6262	7628924	700609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6263	7628931	700612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6264	7628938	700614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6265	7628941	700622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6266	7628943	700626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6267	7628947	700632	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6268	7628955	700636	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6269	7628963	700638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6270	7628969	700646	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6271	7628972	700649	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6272	7628979	700653	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6273	7628983	700662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6274	7628985	700663	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6275	7628990	700666	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6276	7629002	700672	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6277	7629006	700676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6278	7629011	700681	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6279	7629017	700689	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6280	7629023	700695	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6281	7629027	700700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6282	7629032	700702	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6283	7629035	700705	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6284	7629041	700705	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6285	7629046	700712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6286	7629056	700719	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6287	7629064	700728	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6288	7629074	700733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6289	7629082	700743	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6290	7629086	700746	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6291	7629093	700749	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6292	7629096	700759	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6293	7629111	700763	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6294	7629115	700766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6295	7629119	700769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6296	7629122	700771	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6297	7629126	700774	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6298	7629131	700780	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6299	7629135	700784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6300	7629141	700790	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6301	7629145	700796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6302	7629148	700797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6303	7629150	700804	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6304	7629164	700812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6305	7629168	700814	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6306	7629173	700819	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6307	7629176	700823	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6308	7629181	700827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6309	7629188	700831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6310	7629196	700835	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6311	7629198	700838	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6312	7629204	700843	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6313	7629203	700845	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6314	7629214	700847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6315	7629217	700852	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6316	7629223	700856	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6317	7629231	700859	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6318	7629235	700860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6319	7629235	700866	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6320	7629241	700873	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6321	7629247	700880	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6322	7629257	700883	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6323	7629265	700889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6324	7629269	700895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6325	7629277	700897	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6326	7629275	700911	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6327	7629266	700920	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6328	7629261	700926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6329	7629260	700932	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6330	7628732	700842	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6331	7628729	700841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6332	7628718	700834	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6333	7628714	700830	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6334	7628697	700819	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6335	7628672	700814	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6336	7628663	700807	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6337	7628656	700801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6338	7628649	700796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6339	7628635	700793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6340	7628626	700793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6341	7628621	700792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6342	7628620	700788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6343	7628619	700784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6344	7628616	700780	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6345	7628614	700777	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6346	7628614	700776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6347	7628614	700778	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6348	7628618	700780	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6349	7628621	700782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6350	7628623	700784	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6351	7628627	700788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6352	7628629	700790	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6353	7628633	700796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6354	7628637	700800	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6355	7628651	700809	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6356	7628658	700815	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6357	7628663	700820	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6358	7628666	700822	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6359	7628674	700812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6360	7628681	700818	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6361	7628692	700829	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6362	7628696	700832	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6363	7628712	700844	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6364	7628742	700869	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6365	7628754	700878	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6366	7628761	700885	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6367	7628768	700890	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6368	7628777	700899	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6369	7628787	700907	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6370	7628792	700910	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6371	7628797	700914	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6372	7628802	700920	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6373	7628818	700934	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6374	7628825	700945	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6375	7628844	700952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6376	7628863	700980	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6377	7628886	700980	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6378	7628892	700993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6379	7628901	701000	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6380	7628904	701003	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6381	7628907	701004	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6382	7628916	701011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6383	7628921	701016	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6384	7628925	701017	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6385	7628929	701020	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6386	7628935	701026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6387	7628940	701031	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6388	7628944	701034	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6389	7628951	701036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6390	7628959	701043	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6391	7628966	701049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6392	7628970	701053	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6393	7628974	701059	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6394	7628982	701066	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6395	7628989	701073	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6396	7628994	701079	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6397	7629003	701086	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6398	7629013	701096	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6399	7629021	701101	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6400	7629027	701105	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6401	7629037	701112	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6402	7628688	700427	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6403	7628692	700443	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6404	7628693	700467	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6405	7628707	700477	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6406	7628720	700490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6407	7628723	700505	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6408	7628727	700503	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6409	7628732	700507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6410	7628737	700511	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6411	7628737	700514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6412	7628740	700515	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6413	7628750	700518	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6414	7628756	700524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6415	7628766	700530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6416	7628770	700537	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6417	7628776	700540	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6418	7628777	700543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6419	7628775	700544	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6420	7628788	700552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6421	7628796	700555	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6422	7628798	700559	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6423	7628811	700567	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6424	7628815	700572	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6425	7628816	700576	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6426	7628822	700574	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6427	7628827	700582	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6428	7628831	700585	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6429	7628834	700588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6430	7628841	700592	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6431	7628849	700599	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6432	7628852	700603	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6433	7628854	700605	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6434	7628860	700611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6435	7628865	700614	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6436	7628868	700615	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6437	7628874	700621	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6438	7628889	700627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6439	7628885	700631	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6440	7628897	700635	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6441	7628906	700650	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6442	7628914	700654	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6443	7628918	700657	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6444	7628922	700662	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6445	7628926	700664	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6446	7628940	700676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6447	7628950	700676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6448	7628955	700685	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6449	7628960	700692	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6450	7628967	700697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6451	7628972	700700	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6452	7628986	700711	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6453	7628988	700703	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6454	7628985	700712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6455	7628998	700712	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6456	7629012	700719	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6457	7629017	700722	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6458	7629016	700729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6459	7629026	700733	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6460	7629038	700735	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6461	7629030	700750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6462	7629045	700747	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6463	7629045	700760	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6464	7629055	700752	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6465	7629055	700768	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6466	7629061	700772	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6467	7629063	700776	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6468	7629069	700779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6469	7629073	700782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6470	7629079	700791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6471	7629080	700792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6472	7629083	700796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6473	7629085	700797	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6474	7629089	700800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6475	7629091	700802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6476	7629097	700803	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6477	7629101	700804	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6478	7629103	700808	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6479	7629115	700802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6480	7629120	700806	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6481	7629126	700812	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6482	7629132	700813	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6483	7629135	700825	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6484	7629149	700830	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6485	7629142	700841	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6486	7629146	700844	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6487	7629150	700847	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6488	7629157	700854	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6489	7629164	700860	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6490	7629169	700865	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6491	7629177	700870	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6492	7629181	700875	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6493	7629189	700879	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6494	7629192	700884	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6495	7629196	700887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6496	7629198	700889	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6497	7629203	700893	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6498	7629207	700895	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6499	7629209	700897	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6500	7629216	700901	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6501	7629220	700903	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6502	7629221	700910	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6503	7629226	700915	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6504	7629231	700918	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6505	7629236	700923	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6506	7629243	700926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6507	7629252	700927	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6508	7629255	700924	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6509	7629068	701154	3.41	9.01	0.00	0.00	0.00	aluated & Dismiss	-
Contact6510	7622030	729708	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6512	7621518	728812	2.91	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6513	7621484	728783	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6514	7621462	728749	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6515	7621343	729168	20.88	2.69	5.68	0.00	1.32	Log	-
Contact6516	7621220	729117	5.14	2.14	5.14	0.00	1.06	debris	-
Contact6517	7620999	728797	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact6518	7619844	727918	15.81	0.00	4.61	0.00	0.86	Log	-
Contact6519	7619613	727559	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6520	7619818	727439	2.34	0.00	1.46	0.00	0.86	debris	-
Contact6521	7618822	726788	8.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6522	7618664	726332	2.18	0.00	9.08	0.00	4.06	debris	-
Contact6523	7618257	725842	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6524	7617745	725102	11.51	0.00	7.72	0.00	3.11	debris	-
Contact6525	7617169	724226	5.22	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6526	7616505	721335	2.56	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6527	7616600	720736	8.24	0.00	1.43	0.00	1.05	debris	-
Contact6528	7616553	720298	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6529	7616827	719221	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6530	7617464	717439	0.00	0.00	0.00	0.00	0.00	Gravel	-
Contact6531	7617396	717412	12.48	19.13	0.00	0.00	0.00	Gravel	-
Contact6532	7617373	717399	16.31	16.13	0.00	0.00	0.00	Gravel	-
Contact6533	7617713	717558	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6534	7617940	717308	19.71	3.94	18.27	0.00	3.36	debris	-
Contact6535	7617764	717137	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6536	7618820	714682	5.14	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6537	7620193	711029	9.17	0.00	3.13	0.00	0.49	debris	-
Contact6538	7646956	685700	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6539	7644653	688629	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact6540	7644603	688739	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact6541	7644588	688823	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6542	7644438	688655	6.74	0.00	4.08	0.00	3.55	debris	-
Contact6543	7644280	689193	25.72	0.00	2.65	0.00	1.11	Log	-
Contact6544	7644271	689209	9.12	0.00	1.02	0.00	0.45	Log	-
Contact6545	7641123	692520	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact6546	7641070	692597	20.29	8.01	5.39	0.00	1.53	wreck	?
Contact6547	7639398	695263	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6548	7639074	695502	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6549	7639068	695509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6550	7639054	695514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6551	7637136	696480	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6552	7637103	696508	16.28	0.00	0.00	0.00	0.00	Piling	-
Contact6553	7636063	697075	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6554	7635476	697380	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6555	7633021	698818	40.76	0.00	2.91	0.00	0.78	Log	-
Contact6556	7633022	700779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6557	7633003	700785	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6558	7632991	700788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6559	7632978	700792	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6560	7632962	700798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6561	7632932	700810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6562	7632909	700816	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6563	7632880	700824	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6564	7632842	700835	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6565	7632868	700828	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6566	7632795	700849	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6567	7632788	700851	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6568	7632766	700857	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6569	7632752	700864	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6570	7632726	700867	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6571	7632713	700874	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6572	7632696	700878	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6573	7632693	700879	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6574	7632676	700882	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6575	7632669	700886	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6576	7632666	700887	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6577	7632659	700888	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6578	7632650	700891	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6579	7632639	700893	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6580	7632609	700903	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6581	7632597	700908	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6582	7632576	700912	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6583	7632550	700918	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6584	7632534	700925	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6585	7632527	700930	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6586	7632522	700935	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6587	7632782	700564	5.55	0.00	2.19	0.00	0.63	debris	-
Contact6588	7632103	701098	7.78	0.00	0.00	0.00	0.00	Piling	-
Contact6589	7632100	701079	15.00	0.00	0.00	0.00	0.00	Dolphin	-
Contact6590	7632095	701063	7.13	0.00	0.00	0.00	0.00	Piling	-
Contact6591	7632106	701060	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6592	7632117	701058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6593	7632124	701059	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6594	7632126	701058	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6595	7632151	701046	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6596	7632167	701043	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6597	7632192	701036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6598	7632202	701036	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6599	7632212	701032	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6600	7632232	701026	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6601	7632242	701020	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6602	7632251	701015	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6603	7632258	701014	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6604	7632265	701013	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6605	7632274	701011	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6606	7632292	701004	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6607	7632305	700999	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6608	7632316	701000	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6609	7632330	700998	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6610	7632341	700991	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6611	7632346	700987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6612	7632355	700987	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6613	7632378	700978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6614	7632384	700978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6615	7632389	700980	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6616	7632394	700976	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6617	7632406	700968	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6618	7632415	700967	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6619	7632427	700960	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6620	7632436	700957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6621	7632447	700952	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6622	7632455	700949	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6623	7632472	700944	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6624	7632488	700943	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6625	7632502	700938	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6626	7632520	700929	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6627	7632530	700927	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6628	7632551	700919	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6629	7632565	700915	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6630	7631802	701330	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6631	7631827	701077	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6632	7631962	701208	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6633	7630791	701999	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6634	7630838	701965	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6635	7630881	701926	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6636	7630908	701928	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6637	7631179	701769	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6638	7631130	701803	28.00	2.30	0.00	0.00	0.65	Debris	-
Contact6639	7631024	701827	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6640	7631244	701791	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6641	7631321	701764	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6642	7631376	701738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6643	7631380	701738	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6644	7631397	701736	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6645	7631330	701721	16.30	3.00	4.87	0.00	1.44	Debris	-
Contact6646	7631446	701708	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6647	7631529	701692	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6648	7631486	701622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6649	7631529	701607	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6650	7631519	701595	2.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6651	7632019	701512	5.50	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6652	7631906	701626	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6653	7632100	701547	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6654	7632108	701547	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6655	7632152	701588	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6656	7632154	701568	1.50	0.00	1.07	0.00	0.00	Debris	-
Contact6657	7632254	701644	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6658	7632481	701704	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6659	7632667	701776	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6660	7632759	701865	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6661	7632816	701867	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6662	7632841	701893	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6663	7632857	701916	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6664	7632865	701922	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6665	7632870	701930	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6666	7632876	701937	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6667	7632879	701944	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6668	7632881	701947	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6669	7632885	701952	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6670	7632889	701956	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6671	7632896	701959	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6672	7632902	701966	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6673	7632907	701973	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6674	7632716	701846	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6675	7632957	701816	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6676	7632949	701889	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6677	7632927	701904	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6678	7632983	701919	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6679	7633040	701911	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6680	7633083	701905	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6681	7632912	701989	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6682	7632916	702000	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6683	7632919	702013	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6684	7633031	701919	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6685	7633036	701928	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6686	7633047	701929	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6687	7633060	701918	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6688	7633057	701924	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6689	7633127	701905	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6690	7633153	701898	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6691	7633310	701898	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6692	7633428	701848	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6693	7633472	701821	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6694	7633488	701800	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6695	7633501	701796	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6696	7633523	701776	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6697	7633493	701740	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6698	7633554	701754	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6699	7633590	701724	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6700	7633598	701717	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6701	7633602	701717	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6702	7633629	701692	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6703	7633635	701687	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6704	7633643	701683	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6705	7633649	701680	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6706	7633673	701655	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6707	7633677	701652	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6708	7633680	701649	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6709	7633687	701646	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6710	7633705	701626	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6711	7633711	701623	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6712	7633729	701607	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6713	7633699	701557	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6714	7633753	701560	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6715	7633775	701575	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6716	7633821	701535	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6717	7633758	701461	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6718	7633942	701382	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6719	7633943	701406	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6720	7633873	701377	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6721	7633870	701391	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6722	7633860	701402	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6723	7633838	701482	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6724	7633798	701481	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6725	7633786	701478	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6726	7633573	701142	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6727	7633970	701391	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6728	7634044	701317	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6729	7634071	701312	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6730	7634035	701238	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6731	7634046	701248	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6732	7634176	701058	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6733	7633153	701786	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6734	7633170	701787	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6735	7632227	701459	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6736	7632672	701282	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6737	7632550	701555	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6738	7632158	701490	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6739	7632151	701503	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6740	7632149	701525	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6741	7632144	701530	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6742	7632195	701546	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6743	7632206	701538	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6744	7632197	701529	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6745	7632225	701526	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6746	7632222	701500	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6747	7631995	701444	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6748	7632007	701461	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6749	7632037	701498	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6750	7632126	701521	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6751	7632103	701535	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6752	7632092	701513	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6753	7632070	701520	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6754	7631930	701535	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6755	7631891	701512	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6756	7632714	701281	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6757	7632180	701134	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6758	7632158	701096	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6759	7631430	700666	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6760	7631415	700651	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6761	7631397	700631	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6762	7631392	700616	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6763	7631399	700604	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6764	7631414	700596	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6765	7631423	700593	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6766	7631428	700582	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6767	7631431	700576	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6768	7631434	700576	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6769	7631440	700575	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6770	7631447	700564	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6771	7631455	700562	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6772	7631459	700563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6773	7631462	700557	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6774	7631465	700552	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6775	7631468	700550	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6776	7631473	700549	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6777	7631480	700542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6778	7631480	700542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6779	7631494	700534	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6780	7631501	700528	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6781	7631505	700523	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact6782	7631508	700519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6783	7631513	700513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6784	7631524	700507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6785	7631533	700499	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6786	7631537	700497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6787	7631545	700493	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6788	7631552	700484	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6789	7631555	700483	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6790	7631560	700482	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6791	7631564	700476	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6792	7631571	700467	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6793	7631577	700464	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6794	7631587	700461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6795	7631594	700458	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6796	7631598	700455	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6797	7631598	700449	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6798	7631601	700445	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6799	7631605	700447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6800	7631608	700447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6801	7631612	700447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6802	7631615	700441	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6803	7631619	700434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6804	7631629	700428	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6805	7631637	700423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6806	7631650	700410	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6807	7631660	700403	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6808	7631759	700298	5.40	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6809	7631670	700397	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6810	7631672	700387	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6811	7631680	700388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6812	7631683	700388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6813	7631686	700384	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6814	7631689	700376	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6815	7631692	700374	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6816	7631699	700375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6817	7631712	700370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6818	7631720	700364	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6819	7631719	700358	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6820	7631718	700355	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6821	7631721	700356	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6822	7631728	700356	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6823	7631739	700341	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6824	7631742	700335	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6825	7631748	700332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6826	7631760	700327	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6827	7631772	700318	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6828	7631767	700308	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6829	7631778	700304	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6830	7631793	700301	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6831	7631800	700291	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6832	7631807	700289	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6833	7631815	700290	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6834	7631818	700285	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6835	7631818	700278	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6836	7631819	700273	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6837	7631829	700271	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6838	7631843	700263	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6839	7631849	700256	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6840	7631849	700250	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6841	7631853	700253	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6842	7631858	700255	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6843	7631863	700252	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6844	7631869	700244	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6845	7631868	700237	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6846	7631870	700233	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6847	7631882	700227	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6848	7631892	700226	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6849	7631898	700224	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6850	7631904	700222	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6851	7631910	700212	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6852	7631910	700204	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6853	7631908	700204	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6854	7631915	700203	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6855	7631932	700191	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6856	7631939	700187	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6857	7631944	700182	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6858	7631944	700176	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6859	7631947	700172	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6860	7631957	700170	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6861	7631967	700168	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6862	7631972	700159	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6863	7631975	700153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6864	7631982	700150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6865	7631986	700148	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6866	7632628	699557	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6867	7630748	702040	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6868	7630702	702078	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6869	7630656	702111	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6870	7630612	702154	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6871	7630845	701957	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6872	7630558	702195	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6873	7630517	702261	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6874	7630417	702305	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6875	7630240	702329	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6876	7630338	702349	2.50	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6877	7630160	702409	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6878	7630225	702461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6879	7630192	702490	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6880	7630282	702415	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6881	7630145	702526	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6882	7630140	702532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6883	7630132	702538	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6884	7630127	702542	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6885	7630123	702545	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6886	7630117	702551	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6887	7630109	702556	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6888	7630102	702562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6889	7630096	702566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6890	7630092	702569	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6891	7630087	702574	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6892	7630039	702612	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6893	7629982	702658	26.53	0.00	0.00	0.00	0.00	Dolphin	-
Contact6894	7629949	702682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6895	7629620	702973	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6896	7629665	703049	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6897	7629690	703077	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6898	7629657	703056	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6899	7629681	703084	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6900	7629564	703093	171.30	45.02	0.00	0.00	0.00	Structure	??
Contact6901	7629556	703338	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6902	7629542	703351	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6903	7629522	703361	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6904	7629360	703214	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6905	7629398	703230	30.90	55.31	0.00	0.00	0.00	Debris - NMH	-
Contact6906	7629376	703297	3.49	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6907	7629271	703304	6.94	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6908	7629190	703343	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6909	7629202	703393	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6910	7629169	703359	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6911	7629085	703335	18.86	0.00	0.00	0.00	0.00	Dolphin	-
Contact6912	7629141	703388	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6913	7629128	703396	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6914	7629120	703401	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6915	7629115	703407	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6916	7629108	703411	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6917	7629107	703420	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6918	7629097	703423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6919	7629093	703427	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6920	7629086	703429	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6921	7629083	703430	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6922	7629081	703434	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6923	7629075	703438	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6924	7629067	703444	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6925	7629066	703447	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6926	7629062	703448	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6927	7629059	703456	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6928	7629051	703462	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6929	7629044	703469	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6930	7629038	703471	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6931	7629033	703474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6932	7629026	703474	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6933	7629021	703481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6934	7629016	703478	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6935	7629010	703480	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6936	7629021	703481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6937	7629007	703487	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6938	7629004	703499	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6939	7629000	703504	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6940	7628992	703499	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6941	7628993	703509	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6942	7628982	703507	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6943	7628980	703513	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6944	7628975	703514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6945	7628971	703524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6946	7628976	703521	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6947	7628971	703522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6948	7628962	703522	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6949	7628963	703524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6950	7628959	703528	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6951	7628958	703530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6952	7628955	703533	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6953	7628954	703539	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6954	7628944	703543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6955	7628941	703552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6956	7628934	703553	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6957	7628937	703561	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6958	7628930	703561	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6959	7628928	703564	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6960	7628923	703566	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6961	7628916	703578	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6962	7628910	703588	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6963	7628899	703600	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6964	7628889	703604	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6965	7628881	703611	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6966	7629015	703320	27.18	10.30	12.94	0.00	3.55	debris	-
Contact6967	7628868	703618	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact6968	7628860	703627	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6969	7628852	703635	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6970	7628843	703644	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6971	7628835	703652	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6972	7628827	703659	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6973	7628818	703669	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6974	7628807	703676	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6975	7628802	703683	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6976	7628800	703688	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6977	7628795	703698	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6978	7628810	703742	2.03	0.00	7.53	0.00	1.57	debris	-
Contact6979	7628801	703706	20.16	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6980	7628792	703717	21.38	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6981	7628785	703755	0.66	0.00	5.53	0.00	1.66	debris	-
Contact6982	7628784	703743	0.65	0.00	11.89	0.00	3.52	debris	-
Contact6983	7628787	703761	2.93	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6984	7628795	703762	2.79	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6985	7628800	703779	0.80	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6986	7628803	703787	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6987	7628797	703789	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6988	7628794	703792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6989	7628787	703798	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6990	7628778	703793	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6991	7628773	703800	1.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6992	7628768	703814	30.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact6993	7628689	703801	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6994	7628686	703815	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6995	7628684	703831	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact6996	7628555	703801	28.04	0.00	0.00	0.00	0.00	debris	-
Contact6997	7628530	703772	35.55	0.00	0.00	0.00	0.00	debris	-
Contact6998	7628629	704238	24.63	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact6999	7628580	704273	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7000	7628666	704232	22.71	0.00	20.14	0.00	1.06	Log	-
Contact7001	7628912	703953	3.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7002	7628863	703853	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7003	7628010	704123	2.20	0.00	0.00	0.00	314.02	Piling	-
Contact7004	7627966	704110	16.53	0.00	5.02	0.00	2.21	debris	-
Contact7005	7628252	704184	13.09	0.00	4.27	0.00	2.31	debris	-
Contact7006	7627611	704567	1.73	0.00	3.59	0.00	1.48	debris	-
Contact7007	7627239	704429	57.52	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7008	7626964	704847	27.95	0.00	7.73	0.00	0.47	Log	-
Contact7009	7627035	704864	33.52	0.00	2.05	0.00	0.18	Log	-
Contact7010	7627054	704854	27.93	0.00	3.27	0.00	0.36	debris	-
Contact7011	7627111	704802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7012	7627110	704778	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7013	7627100	704755	0.00	0.00	0.00	0.00	0.00	debris	-
Contact7014	7627035	704943	5.37	0.00	38.13	0.00	5.77	debris	-
Contact7015	7626981	704865	24.01	0.00	1.40	0.00	0.08	debris	-
Contact7016	7626937	704908	18.95	0.00	3.01	0.00	0.14	debris	-
Contact7017	7626903	704926	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7018	7626871	704962	12.61	0.00	8.56	0.00	0.33	debris	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7019	7626957	704725	7.78	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7020	7626956	704712	6.59	0.00	5.40	0.00	0.78	debris	-
Contact7021	7626960	704711	8.79	0.00	4.56	0.00	0.67	debris	-
Contact7022	7626966	704705	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7023	7627177	705065	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7024	7627189	705067	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7025	7627188	705111	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7026	7626575	705500	4.00	0.00	4.94	0.00	1.27	debris	-
Contact7027	7626577	705500	2.65	2.28	0.00	0.00	0.00	Debris - NMH	-
Contact7028	7626584	705491	5.82	1.35	5.69	0.00	1.48	Debris	-
Contact7029	7626534	705463	16.64	0.00	9.13	0.00	1.78	evaluated & Dismiss	-
Contact7030	7626542	705459	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7031	7626502	705434	13.08	0.00	6.07	0.00	0.92	debris	-
Contact7032	7626496	705439	10.36	0.00	7.23	0.00	1.08	debris	-
Contact7033	7626908	705373	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7034	7626995	705479	6.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7035	7627025	705435	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7036	7626948	705333	0.00	0.00	7.73	0.00	5.32	evaluated & Dismiss	-
Contact7037	7626961	705342	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7038	7626546	705499	3.02	0.00	27.41	0.00	5.36	debris	-
Contact7039	7626534	705512	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7040	7626517	705483	1.28	0.00	60.46	0.00	8.04	Piling	-
Contact7041	7626523	705479	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7042	7626508	705487	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7043	7626480	705450	4.40	0.00	5.93	0.00	0.74	debris	-
Contact7044	7626500	705436	11.07	0.00	10.27	0.00	1.49	Log	-
Contact7045	7626451	705580	71.92	0.00	10.29	0.00	1.33	Anchor Drag	-
Contact7046	7626524	705595	16.85	0.00	21.22	0.00	6.04	debris	-
Contact7047	7626462	705546	1.97	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7048	7626467	705665	1.42	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7049	7626214	705530	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7050	7626211	705543	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7051	7626209	705556	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7052	7626208	705569	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7053	7626217	705577	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7054	7626208	705583	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7055	7626275	705592	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7056	7626271	705622	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7057	7626259	705599	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7058	7626271	705540	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7059	7626237	705708	5.53	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7060	7626186	705626	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7061	7626183	705632	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7062	7626186	705607	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7063	7626167	705582	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7064	7626126	705576	35.06	0.00	6.22	0.00	0.64	Log	-
Contact7065	7626131	705615	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7066	7626132	705629	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7067	7626132	705634	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7068	7626108	705610	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7069	7626085	705636	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7070	7626094	705622	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7071	7626057	705616	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7072	7626120	705807	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7073	7626192	705914	17.68	0.00	19.60	0.00	4.47	debris	-
Contact7074	7626375	705892	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7075	7626372	705860	5.10	0.00	16.75	0.00	4.41	debris	-
Contact7076	7626478	705844	1.71	0.00	12.72	0.00	3.40	debris	-
Contact7077	7626489	705853	0.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7078	7626497	705865	4.00	0.00	0.00	0.00	6.24	Piling	-
Contact7079	7626030	705669	0.00	0.00	0.00	0.00	0.00	debris	-
Contact7080	7626067	705943	65.21	0.00	30.70	0.00	6.85	debris	-
Contact7081	7626078	705800	5.91	0.00	6.08	0.00	4.00	debris	-
Contact7082	7625777	705658	50.57	0.00	0.00	0.00	0.00	Dredge Artifact	-
Contact7083	7626100	705888	18.98	0.00	34.80	0.00	11.70	debris	-
Contact7084	7626004	705739	34.29	0.00	3.98	0.00	0.84	Gravel	-
Contact7085	7626020	705718	23.21	0.00	0.00	0.00	0.00	Log	-
Contact7086	7626017	705693	4.27	0.00	37.21	0.00	4.82	debris	-
Contact7087	7625913	705670	7.47	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7088	7625791	705820	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7089	7625829	705834	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7090	7625828	705770	32.50	0.00	12.08	0.00	1.76	Log	-
Contact7091	7625787	705841	46.32	0.00	7.82	0.00	1.66	Log	-
Contact7092	7625434	705864	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7093	7625435	705871	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7094	7625360	706178	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7095	7625364	706174	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7096	7625369	706177	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7097	7625393	706162	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7098	7625398	706160	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7099	7625404	706158	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7100	7625409	706157	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7101	7625422	706153	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7102	7625433	706150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7103	7625440	706152	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7104	7625447	706150	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7105	7625483	706144	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7106	7625494	706146	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7107	7625500	706145	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7108	7625503	706146	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7109	7625520	706138	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7110	7625528	706139	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7111	7625532	706140	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7112	7625536	706141	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7113	7625304	706195	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7114	7625313	706207	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7115	7625335	706210	6.42	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7116	7625278	706242	2.54	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7117	7625287	706262	2.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7118	7625221	706298	4.86	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7119	7625299	706111	29.07	0.00	2.33	0.00	1.41	debris	-
Contact7120	7625175	706030	1.67	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7121	7625080	706278	14.72	0.00	10.38	0.00	5.43	debris	-
Contact7122	7625046	706266	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7123	7625025	706277	15.47	0.00	4.79	0.00	3.22	debris	-
Contact7124	7624495	706802	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7125	7624497	706792	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7126	7624501	706790	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7127	7624511	706782	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7128	7624522	706779	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7129	7624547	706750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7130	7624561	706766	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7131	7624569	706767	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7132	7624592	706744	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7133	7624626	706706	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7134	7624654	706692	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7135	7624698	706661	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7136	7624291	706768	2.98	0.00	1.94	0.00	0.76	debris	-
Contact7137	7624070	707067	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7138	7623587	707335	0.00	0.00	31.48	0.00	11.93	Piling	-
Contact7139	7623580	707343	2.64	0.00	12.39	0.00	3.92	debris	-
Contact7140	7623574	707333	4.29	0.00	13.38	0.00	3.64	debris	-
Contact7141	7623553	707358	3.96	0.00	10.87	0.00	3.64	debris	-
Contact7142	7623499	707403	14.32	0.00	12.66	0.00	4.05	debris	-
Contact7143	7623054	707768	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7144	7623061	707755	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7145	7623073	707852	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7146	7623053	707862	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7147	7622891	707894	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7148	7622381	708330	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7149	7622374	708369	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7150	7622356	708367	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7151	7622317	708512	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7152	7622307	708519	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7153	7622301	708518	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7154	7622292	708512	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7155	7622285	708503	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7156	7622278	708498	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7157	7622263	708489	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7158	7622251	708499	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7159	7622162	708649	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7160	7622169	708525	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7161	7622032	708720	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7162	7622061	708910	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7163	7621973	708961	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7164	7621720	709249	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7165	7621599	709434	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7166	7621611	709409	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7167	7621615	709402	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7168	7621496	709211	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7169	7621376	709332	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7170	7621329	709415	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7171	7621313	709450	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7172	7621199	709405	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7173	7621283	709513	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7174	7621288	709525	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7175	7621299	709821	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7176	7621304	709798	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7177	7621093	709695	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7178	7621255	709836	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7179	7621059	710196	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7180	7620136	711606	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7181	7620024	711539	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7182	7620958	710392	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7183	7620544	710306	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7184	7620440	710522	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7185	7620672	710932	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7186	7620671	710937	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7187	7620668	710940	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7188	7620666	710955	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7189	7620667	710948	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7190	7620666	710951	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7191	7620664	710950	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7192	7620665	710949	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7193	7620663	710957	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7194	7620676	710728	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7195	7620423	711333	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7196	7619314	713627	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7197	7619316	713621	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7198	7619319	713616	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7199	7619319	713613	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7200	7619324	713598	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7201	7619327	713594	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7202	7619328	713589	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7203	7619331	713585	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7204	7619335	713583	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7205	7619348	713583	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7206	7619359	713584	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7207	7619366	713584	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7208	7619374	713585	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7209	7619381	713581	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7210	7619384	713576	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7211	7619385	713568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7212	7619392	713568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7213	7619400	713569	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7214	7619408	713570	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7215	7619418	713571	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7216	7619427	713574	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7217	7619433	713574	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7218	7619434	713568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7219	7619431	713563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7220	7619431	713560	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7221	7619436	713554	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7222	7619446	713555	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7223	7619453	713557	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7224	7619460	713560	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7225	7619468	713563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7226	7619473	713565	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7227	7619481	713569	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7228	7619488	713573	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7229	7619494	713577	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7230	7619495	713577	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7231	7619490	713573	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7232	7619482	713568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7233	7619477	713566	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7234	7619471	713563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7235	7619466	713558	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7236	7619463	713553	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7237	7619468	713549	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7238	7619476	713548	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7239	7619482	713547	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7240	7619493	713544	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7241	7619502	713546	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7242	7619520	713543	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7243	7619528	713542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7244	7619543	713542	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7245	7619556	713549	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7246	7619563	713550	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7247	7619570	713553	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7248	7619580	713556	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7249	7619588	713558	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7250	7619596	713558	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7251	7619595	713554	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7252	7619592	713549	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7253	7619588	713544	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7254	7619583	713539	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7255	7619577	713533	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7256	7619579	713529	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7257	7619588	713530	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7258	7619596	713531	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7259	7619604	713530	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7260	7619613	713529	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7261	7619621	713527	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7262	7619626	713527	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7263	7619633	713524	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7264	7619644	713524	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7265	7619256	713341	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7266	7620389	710523	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7267	7620584	710938	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7268	7620471	711221	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7269	7619806	712476	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7270	7619805	712550	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7271	7619812	712490	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7272	7619306	713633	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7273	7619307	713638	0.00	0.00	0.00	0.00	0.00	unclassified	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7274	7619309	713641	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7275	7619313	713646	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7276	7618765	714784	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7277	7618743	714815	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7278	7618067	716600	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7279	7617996	717239	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7280	7641823	691132	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7281	7642339	690568	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7282	7642348	689991	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7283	7643256	689547	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7284	7643271	689518	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7285	7643363	689152	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7286	7643420	689147	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7287	7643674	689134	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7288	7643853	688678	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7289	7644448	688541	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7290	7644894	688047	42.65	0.00	10.91	0.00	2.43	Log	-
Contact7291	7644971	688029	25.35	0.00	7.90	0.00	1.45	Log	-
Contact7292	7644975	688066	33.48	0.00	5.75	0.00	0.97	Log	-
Contact7293	7645048	687966	29.26	0.00	17.32	0.00	2.84	Log	-
Contact7294	7645083	687892	57.42	0.00	17.95	0.00	3.14	Log	-
Contact7295	7645121	687922	31.76	0.00	15.62	0.00	2.33	Dredge Artifact	-
Contact7296	7645136	687807	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7297	7645297	687643	33.18	0.00	11.94	0.00	2.44	debris	-
Contact7298	7645311	687418	34.75	0.00	8.56	0.00	4.44	Log	-
Contact7299	7645757	686480	6.59	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7300	7645918	686694	0.00	0.00	0.00	0.00	0.00	Dredge Artifact	-
Contact7301	7645906	686681	0.00	0.00	0.00	0.00	0.00	Dredge Artifact	-
Contact7302	7646396	685674	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7303	7646614	685975	22.73	0.00	7.71	0.00	2.37	debris	-
Contact7304	7646522	685589	2.91	0.00	14.95	0.00	6.05	Anchor Drag	-
Contact7305	7646524	685582	51.13	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7306	7646207	685906	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7307	7638986	694293	5.66	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7308	7639081	694087	1.88	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7309	7638741	694347	17.86	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7310	7640398	693476	14.34	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7311	7640009	693136	4.92	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7312	7639529	693867	3.44	0.00	2.14	0.00	0.48	debris	-
Contact7313	7639347	694654	38.61	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7314	7637810	695403	15.23	5.27	3.82	0.00	1.89	debris	-
Contact7315	7635639	696943	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7316	7634819	697544	33.85	0.00	0.00	0.00	8.53	Anchor Drag	-
Contact7317	7633171	698456	6.52	3.39	6.14	0.00	4.53	debris	-
Contact7318	7633052	698563	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7319	7637524	695586	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7320	7637282	695335	1.38	3.81	0.00	0.00	0.00	Debris - NMH	-
Contact7321	7635213	696518	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7322	7633045	698164	25.35	13.86	0.00	0.00	0.00	Debris - NMH	-
Contact7323	7631133	700320	2.43	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7324	7630180	700848	2.55	0.00	0.00	0.00	0.00	Debris - NMH	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7325	7630002	701670	1.04	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7326	7628095	703354	28.32	0.00	3.63	0.00	2.18	Anchor Drag	-
Contact7327	7627557	703722	10.93	0.00	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact7328	7627916	703832	7.59	0.00	5.28	0.00	2.68	debris	-
Contact7329	7627043	704692	2.12	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7330	7627085	704750	2.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7331	7627000	704768	2.77	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7332	7626980	704743	1.45	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7333	7626952	704715	2.60	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7334	7626956	704717	1.57	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7335	7626970	704736	3.09	0.00	4.23	0.00	1.44	debris	-
Contact7336	7626698	704387	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7337	7626246	705376	40.75	0.00	7.88	0.00	2.00	Log	-
Contact7338	7626191	705415	37.03	0.00	6.07	0.00	1.59	Log	-
Contact7339	7626203	705440	34.89	0.00	3.55	0.00	0.83	Log	-
Contact7340	7626129	705412	27.78	0.00	6.21	0.00	1.92	Log	-
Contact7341	7625748	705560	17.20	2.61	0.00	0.00	0.00	Sonar Artifact	-
Contact7342	7625797	705625	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7343	7626334	705165	13.54	2.59	0.00	0.00	0.00	debris	-
Contact7344	7626333	705273	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7345	7626353	705262	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7346	7626371	705265	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7347	7625454	705237	10.92	0.00	7.95	0.00	1.86	Dredge Artifact	-
Contact7348	7625495	705272	20.38	0.00	10.22	0.00	3.07	Dredge Artifact	-
Contact7349	7625675	705604	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7350	7623782	706459	0.00	0.00	0.00	0.00	0.00	Dredge Artifact	-
Contact7351	7623205	706858	28.25	6.37	2.63	0.00	2.16	Anchor Drag	-
Contact7352	7623281	706703	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7353	7622609	707724	35.56	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7354	7622767	707811	27.03	0.00	3.91	0.00	0.90	Log	-
Contact7355	7622579	707745	0.00	0.00	0.00	0.00	0.00	Sonar Artifact	-
Contact7356	7621574	708663	46.16	4.86	4.96	0.00	2.76	debris	Scoured In
Contact7357	7621149	709071	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7358	7621236	709416	22.01	0.00	8.41	0.00	5.50	debris	-
Contact7359	7621227	709434	7.23	0.00	6.30	0.00	3.92	debris	-
Contact7360	7621032	709369	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7361	7620529	709830	26.47	4.82	7.89	0.00	1.90	Debris - NMH	-
Contact7362	7619932	710822	0.76	0.99	4.16	0.00	1.29	debris	-
Contact7363	7619921	710952	3.69	9.95	0.00	0.00	0.00	Debris - NMH	Scoured In
Contact7364	7619386	712998	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7365	7618861	713420	2.56	8.60	10.54	0.00	2.97	debris	-
Contact7366	7619928	710584	9.83	4.12	7.20	0.00	2.31	debris	-
Contact7367	7620109	711159	10.95	0.00	5.72	0.00	2.85	debris	-
Contact7368	7619798	710868	6.22	0.00	11.27	0.00	4.01	debris	-
Contact7369	7619896	710938	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7370	7619735	710904	50.39	7.81	0.00	0.00	0.00	Anchor Drag	-
Contact7371	7619607	711045	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7372	7620048	711240	16.55	0.00	7.35	0.00	3.25	debris	-
Contact7373	7620044	711269	3.78	8.64	7.98	0.00	3.60	debris	-
Contact7374	7617612	715762	3.30	0.00	15.70	0.00	11.35	debris	-
Contact7375	7617520	716187	31.02	0.00	1.80	0.00	0.61	Anchor Drag	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7376	7616886	717006	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7377	7617184	717205	28.48	4.68	0.00	0.00	0.00	Debris - NMH	-
Contact7378	7616880	718033	12.31	2.75	0.00	0.00	0.00	Debris - NMH	-
Contact7379	7616725	718193	49.82	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7380	7616715	718417	17.66	0.00	8.88	0.00	2.62	Log	-
Contact7381	7616746	718344	32.59	0.00	3.78	0.00	1.16	Log	-
Contact7382	7617071	717369	24.25	0.00	7.92	0.00	4.72	debris	-
Contact7383	7617442	715679	34.40	0.00	23.88	0.00	16.33	Depression	-
Contact7384	7618348	714306	20.37	0.00	3.46	0.00	1.38	debris	-
Contact7385	7619625	711003	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7386	7616569	718614	2.20	0.00	4.90	0.00	2.18	debris	-
Contact7387	7616622	718651	4.55	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7388	7616120	719026	0.88	0.00	50.74	0.00	43.48	Piling	Submerged
Contact7389	7616436	719257	12.55	0.00	26.63	0.00	5.35	debris	-
Contact7390	7616428	719274	5.03	0.00	22.34	0.00	4.46	debris	-
Contact7391	7616351	719188	24.17	0.00	4.52	0.00	1.50	debris	-
Contact7392	7616358	719469	24.43	0.00	11.02	0.00	2.12	debris	-
Contact7393	7616320	719390	7.81	0.00	4.91	0.00	1.23	debris	-
Contact7394	7615651	719636	44.58	0.00	11.76	0.00	1.84	Anchor Drag	-
Contact7395	7615659	719615	4.97	0.00	7.31	0.00	1.15	debris	-
Contact7396	7616081	720334	1.20	6.71	10.55	0.00	2.14	debris	-
Contact7397	7615994	720934	0.00	0.00	0.00	0.00	10.00	aluated & Dismiss	-
Contact7398	7615711	722067	2.24	0.00	13.86	0.00	3.48	Debris	-
Contact7399	7616092	722386	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7400	7616045	722345	1.10	0.00	5.67	0.00	3.25	debris	-
Contact7401	7616039	722231	0.73	5.85	4.50	0.00	2.76	debris	-
Contact7402	7616025	722634	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7403	7615989	723754	3.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7404	7615959	723885	1.32	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7405	7616567	724444	3.84	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7406	7616309	724914	5.25	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7407	7617312	725908	18.78	0.00	9.98	0.00	2.53	debris	-
Contact7408	7617082	726237	13.26	0.00	0.00	0.00	0.00	Unclassified	-
Contact7409	7617449	726204	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7410	7617493	726197	4.44	0.00	2.43	0.00	0.90	debris	-
Contact7411	7617469	726215	3.98	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7412	7619864	728325	139.85	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7413	7619940	728373	0.00	0.00	0.00	0.00	0.00	aluated & Dismiss	-
Contact7414	7619878	728298	5.11	0.00	4.06	0.00	1.51	debris	-
Contact7415	7620230	728588	56.30	0.00	4.17	0.00	1.15	Log	-
Contact7416	7620567	729392	60.94	0.00	10.29	0.00	2.78	Gravel	-
Contact7417	7619337	727271	7.20	0.00	20.40	0.00	5.68	debris	-
Contact7418	7618860	727274	9.30	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7419	7617094	725352	1.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7420	7617159	724941	2.11	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7421	7620951	728583	2.40	1.15	0.00	0.00	0.00	Debris - NMH	-
Contact7422	7620290	727960	5.81	0.00	3.45	0.00	0.94	debris	-
Contact7423	7618617	727227	18.23	0.00	8.19	0.00	1.95	debris	-
Contact7424	7616723	725006	1.90	0.00	9.73	0.00	1.83	Debris - NMH	-
Contact7425	7616719	724996	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7426	7616706	724980	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-

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Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7427	7616714	724983	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7428	7616714	724981	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7429	7616705	724967	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7430	7616438	718889	0.00	0.00	0.00	0.00	0.00	Depression	-
Contact7431	7617834	715253	7.27	0.00	1.83	0.00	1.47	debris	-
Contact7432	7616654	718407	3.26	0.00	3.78	0.00	1.80	debris	-
Contact7433	7629472	700665	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7434	7629456	700652	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7435	7629445	700644	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7436	7629436	700638	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7437	7629427	700630	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7438	7629420	700622	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7439	7629413	700617	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7440	7629400	700609	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7441	7629387	700596	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7442	7629375	700584	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7443	7629363	700575	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7444	7629357	700569	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7445	7629347	700562	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7446	7629334	700552	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7447	7629317	700541	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7448	7629308	700532	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7449	7629294	700519	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7450	7629284	700514	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7451	7629266	700497	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7452	7629252	700486	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7453	7629246	700481	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7454	7629226	700467	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7455	7629220	700461	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7456	7629211	700454	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7457	7629200	700444	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7458	7629193	700439	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7459	7629171	700423	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7460	7629163	700416	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7461	7629150	700402	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7462	7629141	700395	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7463	7629140	700392	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7464	7629039	700332	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7465	7629041	700314	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7466	7629013	700302	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7467	7628989	700281	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7468	7629127	700383	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7469	7629129	700381	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7470	7629119	700375	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7471	7629114	700372	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7472	7629113	700370	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7473	7629108	700366	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7474	7629097	700357	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7475	7629090	700350	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7476	7629074	700337	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7477	7629200	700090	0.00	0.00	0.00	0.00	0.00	Piling	-

Lower Willamette River  
Sonar Contacts Database



Name	Easting	Northing	Length	Width	Shadow	Scour	Height	Primary	Sub
Contact7478	7629205	700092	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7479	7629572	700517	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7480	7629394	700370	1.23	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7481	7629400	700296	26.52	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7482	7629257	700239	0.00	0.00	0.00	0.00	0.00	Anchor Drag	-
Contact7483	7629337	700254	1.62	0.00	0.83	0.00	0.22	debris	-
Contact7484	7629144	700331	0.00	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7485	7629157	700370	3.31	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7486	7629233	700216	0.00	0.00	0.00	0.00	0.00	Debris	-
Contact7487	7629159	700196	2.37	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7488	7629396	700514	1.07	0.00	0.00	0.00	0.00	Debris	-
Contact7489	7631778	697686	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7490	7631782	697697	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7491	7631790	697706	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7492	7631792	697713	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7493	7631798	697720	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7494	7631804	697729	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7495	7631806	697736	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7496	7631811	697744	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7497	7631814	697750	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7498	7631825	697765	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7499	7631832	697775	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7500	7631835	697780	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7501	7631838	697788	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7502	7631840	697796	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7503	7631842	697800	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7504	7631847	697810	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7505	7631774	697682	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7506	7631766	697675	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7507	7631746	697595	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7508	7631792	697543	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7509	7631816	697538	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7510	7631827	697535	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7511	7631834	697530	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7512	7631837	697524	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7513	7631993	697623	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7514	7631351	698105	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7515	7631322	698056	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7516	7631301	698008	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7517	7631296	698001	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7518	7631285	697996	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7519	7631281	697993	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7520	7631277	697989	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7521	7631271	697988	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7522	7631263	697978	0.00	0.00	0.00	0.00	0.00	Piling	-
Contact7523	7631576	698286	0.00	0.00	0.00	0.00	0.00	unclassified	-
Contact7524	7631572	698296	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-
Contact7525	7631537	698053	0.65	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7526	7631589	697929	1.87	0.00	0.00	0.00	0.00	Debris - NMH	-
Contact7527	7625291	705863	0.00	0.00	0.00	0.00	0.00	evaluated & Dismiss	-

Report Title        Sidescan Sonar Survey of the Lower Willamette River, Portland, OR  
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Issued To         Anchor Environmental  
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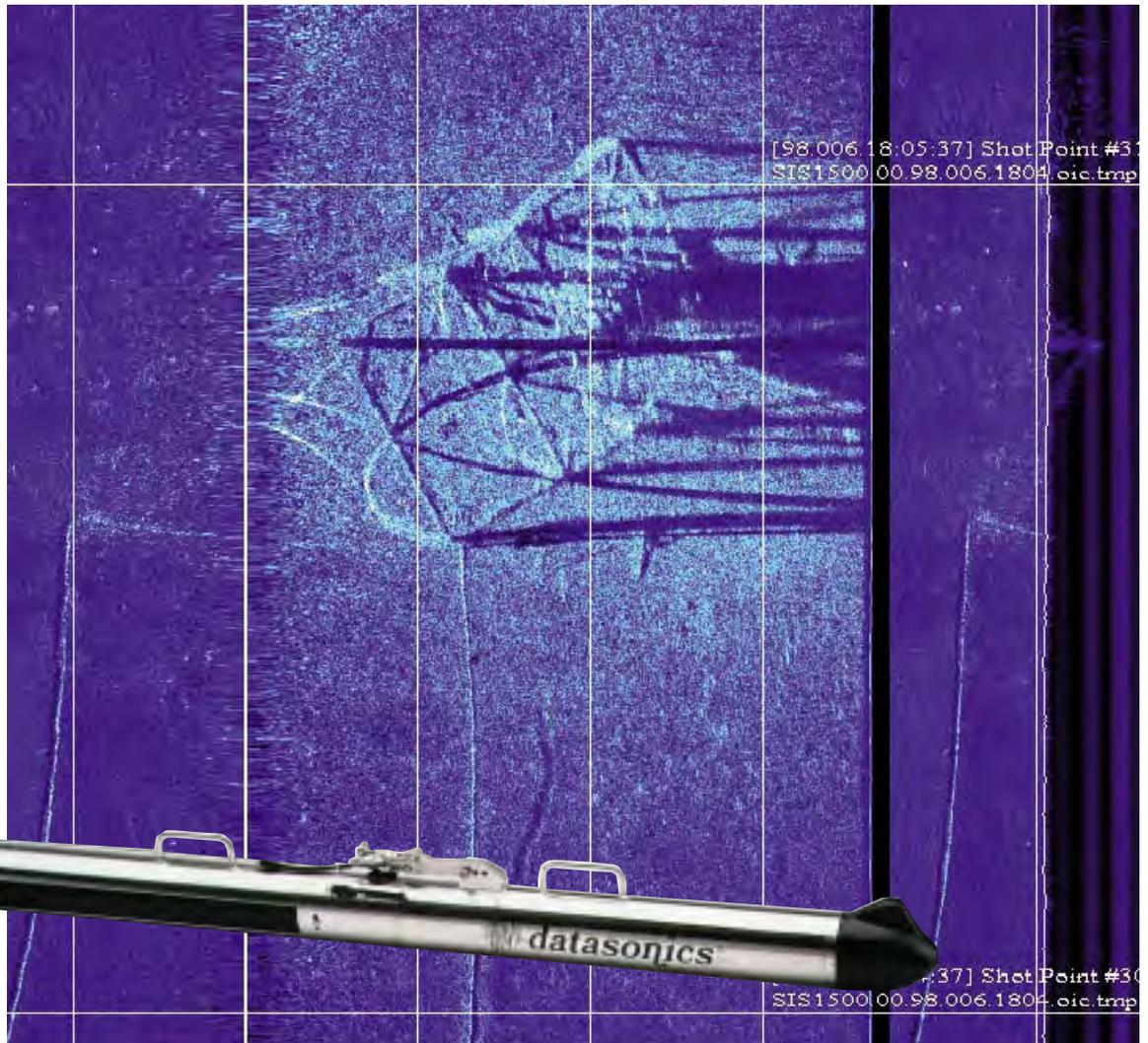


## **B. SYSTEMS SPECIFICATIONS**

### **a. BENTHOS SIS 1500 SPECIFICATIONS**

# Setting the Standard

The SIS-1500 brings the undeniable benefits of Chirp technology to the forefront of the side-scan industry.



▶ ACOUSTICS

▶ FLOTATION

▶ **G E O P H Y S I C A L**

▶ HYDROPHONES

▶ IMAGING

▶ MODEMS

▶ ROBOTICS



**DATASONICS SIS-1500 CHIRP SIDE-SCAN SONAR SYSTEM**

Throughout the last decade, Datasonics has been a pioneer in the development of chirp based seismic and side scan-sonar systems. Now Benthos combines this product innovation with their proven high quality manufacturing to produce the SIS-1500, the industry's ultimate in side-scan sonar technology.

# The SIS-1500 Advantage

## Chirp Technology

The SIS-1500 digitally synthesizes and transmits a linearly swept, frequency- modulated (Chirp) pulse with resolution proportional to transmitted bandwidth—not pulse length. The transmission of longer duration, wide bandwidth pulses result in higher resolution sonar images and, because more energy is projected into the water, greater SNR resulting in extended range. This extended range and resolution provides for optimum system efficiency, resulting in lower survey costs.

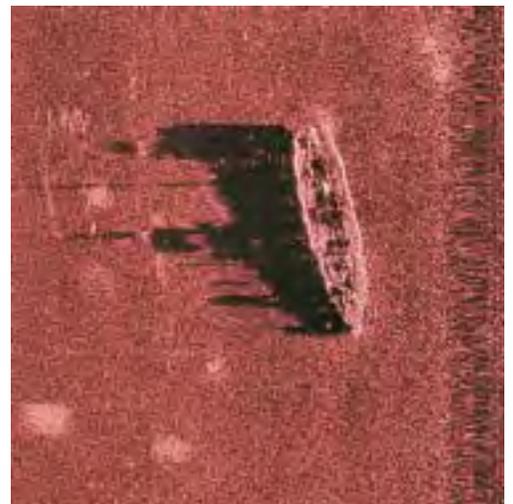
## Full Digital Image Processing

The SIS-1500 ChirpScan sonar image processing software acquires full-bandwidth sonar data in real-time and utilizes a Windows NT graphical user interface to display, process, and archive all sonar data, as well as tow vehicle parameter and sensor data. Upgrades allow for processing of mosaics and target mensuration, and the addition of auxiliary subsea sensors.

## Multidiscipline Survey System

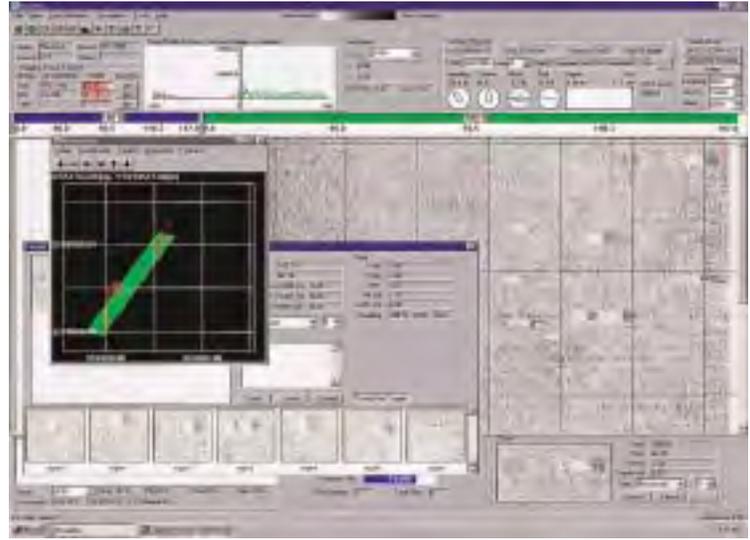
Running a survey to collect only sonar data has become cost prohibitive. With this in mind, Datasonics has developed a digital platform that supports the addition of valuable sensors, which provide supplemental data to the sonar imagery.

Available subsea sensors include pitch, roll and heading (standard), as well as optional magnetometer, water temperature, positioning responder, and pressure. This multidiscipline platform can also be easily configured for AUV applications.



## SYSTEM FEATURES

- Chirp digital side-scan sonar operating in the 200kHz band, capable of achieving a 1000 meter plus swath while still providing high resolution data comparable to conventional "500kHz" systems. This extended range capability can significantly reduce costly survey time.
- Flexible system design allows for towed or AUV/ROV configurations.
- Powerful digital signal processing (DSP) engine performs real-time matched-filter correlation processing on backscatter data, resulting in superior, high-resolution side-scan sonar imagery.
- ChipScan sonar processing and control software, operating on a high-performance Windows NT workstation, features a familiar user interface for control, acquisition, processing, and display of all sonar and sensor data. This fully integrated workstation serves as a comprehensive stand-alone platform, which eliminates the need for costly add-on processing systems.
- Fully-integrated ChirpLink digital multiplexer provides a high-speed, reliable, full-duplex communication link to the tow vehicle over industry standard tow cables. Its flexible design allows for future upgrades to additional analog or digital subsea sensor packages.
- Narrow-beam side-scan sonar transducers (0.5 degree horizontal) provide for sharp, high-resolution along-track sonar imagery. User-adjustable down-look angle.



▲ Image of mine field illustrates the SIS-1500 system's ability to detect targets less than 1 meter in size at over 185 meter range, while generating real-time ship track and coverage plots displaying target positions. Target view provides multiple target presentations for classification and mensuration.

## SOFTWARE FEATURES

- Familiar Windows NT graphical user interface.
- Integrated sonar data acquisition, display, processing and tow vehicle control.
- Fully geocoded user-configurable sonar waterfall, attitude, and navigation displays.
- Real-time tow vehicle sensor data display and logging.
- Real data zoom and event marking. Waterfall data can be slant range and speed corrected.
- Records raw data to any SCSI storage device.
- User configurable Time Varying Gain (TVG), Angle Varying Gain (AVG), and look up tables.
- Easily interfaced to customer selected software packages, such as Triton ISIS, Oceanic Imaging Consultants (OIC), GeoDas, Hunter SeaSone, and more.

## SYSTEM SPECIFICATIONS

### SIP-150 Ship Board Sonar Image Processor

#### Sonar Processor Workstation

Processor:	Intel-based CPU. Dual C40 Digital Signal Processing Engine. High speed, high resolution graphics processor.
Operating System:	Microsoft Windows® NT.
Sonar Display:	Integrated sonar control, display and processing software on a high resolution 1280x1024 video monitor.
Data Recording:	SCSI interface for customer selected recording device.
Hardcopy:	Thermal graphic recorders. (optional)

#### ChirpLink Telemetry System

Sonar Data Uplink:	High speed serial (1.544 Mbps/sec), dual-channel side scan sonar data.
Telemetry Uplink:	FSK tow vehicle data telemetry at 9600 baud for subsea sensor data. Vehicle status for heading, pitch, roll. Receiver gain setting; error checking.
Telemetry Downlink:	FSK command telemetry downlink at 9600 baud supports user supplied sonar and sensor commands.

#### Power/Packaging

Power:	100-125 VAC or 220-240 VAC (auto-sensing).
Dimensions:	12 in. H x 20 in. W x 18 in. D (30.5 cm x 51 cm x 45.7 cm) All components are 19-inch rack-mountable.
Weight:	55 lbs. (25Kg.)

#### Software

Chirpscan SIP150 Sonar Processing Software.  
Includes selectable graphic user interface for data acquisition, playback, and storage.

### TTV-195 Tow Vehicle

#### Sonar Transducers

Frequency:	190-210kHz Chirp.
Source Level:	226dB re 1 uPa @ 1 meter.
Beam width:	0.5 degree x 55 degrees.

#### Subsea Electronics

Range:	25 to 500 meters across-track.
Across Track Resolution:	< 4.0 cm.
A/D Resolution:	16-bit, Sigma-Delta A/D converter.
Sampling Rate:	48 kHz per channel.
Power:	48-150 VDC (300 Watts).

#### Subsea Sensors

Attitude:	Pitch, roll, and heading sensor package standard.
Water Temperature:	External water temperature operates from 0 to 35 Celsius. (optional)
Depth:	Tow vehicle depth sensor, temperature, compensated and accurate to 0.25% full-scale. (optional)
Magnetics:	Magnetometer. (optional)
Responder:	27 kHz Benthos UAP-344. (optional)

#### Tow Vehicle

Material:	316 Stainless Steel.
Weight:	80 lbs. (36 Kg)
Dimensions:	4.5 inch (11.4cm) dia., 70 inches (178cm) long.
Safety Features:	Break-away fins and tow vehicle safety cable. 500 lb. shearpin. Tow vehicle safety cable with 2500 lb. breaking strength.

#### Operational Parameters

Tow Cable:	Supports wide range of industry standard coaxial and multi-conductor cable.
Tow Speed:	1 to 14 knots.
Operating Depth:	2000 meters.

## FEATURES

- Chirp technology allows for high resolution data at 1000 M plus swath
- Full digital image processing
- Multi-discipline survey system
- Easily configured for AUV applications

## OPTIONS

- Magnetometer
- Target/Mosaic Post Processing Software
- Depth Pressure Sensor
- Temperature Compensation
- Responder
- Ethernet Interface



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**b. APPLANIX POS/MV SPECIFICATIONS**

## The Applanix POS MV Elite Providing the Professional Hydrographer with the Most Robust, Reliable, and Repeatable Orientation Solution in the Industry

Applanix is pleased to introduce its newest, highest performance marine motion reference system for maritime surveying and mapping: the POS MV Elite. A tightly coupled Inertial/GPS system that employs high precision ring laser gyros, the new Applanix POS MV Elite includes a highly accurate state-of-the-art inertial measurement unit (IMU) originally designed for the aerospace industry and now available for marine hydrographic service.

### Advantage and Benefits

- Roll and pitch accuracy that is better by a factor of two over current industry standard
- Heading accuracy for hydrographic surveying achieved without dual GPS installation
- Extremely low position drift during GPS outage - five times less than industry standards
- Vertical motion measurement significantly better than industry standards
- Existing POS MV 320 V4 installations can be upgraded to Elite performance
- POS MV Elite IMU is deployed in applications around the world with a proven Mean Time Between Failures surpassing most industry standards
- POS MV Elite includes a data log option for post mission re-processing, providing a position and orientation solution that is unmatched in today's hydrographic market
- Non-military commercial guidelines for export
- Update rate at 200 Hz

The Applanix POS MV Elite utilizes the same proven computer and GPS components found throughout the Applanix POS product line. The POS MV Elite is the perfect system for users who require the highest accuracy in motion measurement for marine applications.



To Find Out More About the POS MV Elite System Visit Our Web Site:

[www.applanix.com](http://www.applanix.com)



# POSMV Elite™

## SPECIFICATIONS

### Performance GPS Available

	DGPS	RTK
Position (m) :	0.5 - 2 m <sup>1</sup>	0.02 - .10 m <sup>1</sup>
Velocity (m/s):	0.01	0.005
Roll & Pitch (deg):	0.005	0.005
True Heading (deg):	0.025 <sup>2</sup>	0.025 <sup>2</sup>
Heave:	3.5cm or 3.5% <sup>3</sup>	

- <sup>1</sup> - One Sigma, depending on quality of differential corrections
- <sup>2</sup> - For survey trajectories that are typical for hydrographic service
- <sup>3</sup> - Whichever is greater, for periods of 20 seconds or less

### Performance GPS Outages

Roll, Pitch Accuracy:	0.005°
Heave Accuracy:	3.5 cm or 3.5% whichever is greater, for periods of 20 seconds or less
Heading Accuracy:	Drift less than 0.1° per hour (negligible for outages <60s)
Position Accuracy Degradation:	1.5 m for 60 second outage DGPS 0.5 m for 60 second outage RTK

### System Measurements

	Size in mm	Weight in Kg	Power	Temp Range Operating
IMU	165 x 162 x 162	4.5	Powered by PCS	-40 to +70 °C
PCS	432 x 89 x 356	5	110/230 Vac	-0 °C to +55 °C
GPS Antenna	187 Ø x 53	1	Powered by PCS	-40 °C to +70 °C



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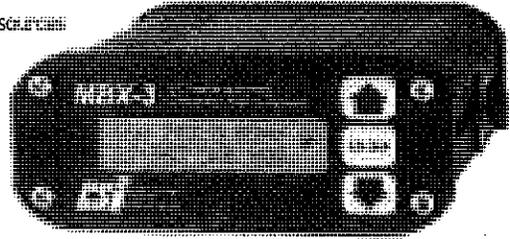
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### **c. CSI MBX3 BEACON RECEIVER**

# MBX-3

- Dual-channel tracking ensures that you receive the best signal
- Fast cold start and short signal-acquisition period saves you time
- Wide input voltage range accommodates a variety of power sources
- Low power consumption extends battery life for portable applications
- Automatic tuning mode permits hands-free operation
- Integrated signal splitter outputs GPS signal from combined differential antennas
- Front-panel interface permits detailed status monitoring and receiver configuration



## Industry Leader

CSI Wireless is an industry leader in the development and manufacture of differential radiobeacon receivers. The MBX-3S differential beacon receiver employs CSI Wireless's proven technology to receive free differential beacon signals available throughout the world.

## World Beacon Network

Navigation authorities around the world have invested in differential radiobeacon networks to supplement GPS positioning, improving positioning accuracy and furthering user safety. Each station transmits industry-standard RTCM SC 104 correction data over a medium frequency signal. Access to each of these high-quality networks is available to the public free of charge as a navigation service.

CSI Wireless's MBX-3S differential beacon receiver is fully compatible with these supplemental networks and surpasses the performance requirements mandated by the governing authorities. This extends the effective operating range and increases the rate of successful demodulation in harsh environments.

## Digital Technology

The MBX-3S employs advanced digital signal processing techniques to ensure consistent signal reception even in noisy environments. This advanced design is complemented by high-performance dynamic signal processing algorithms to achieve the highest performance possible.

## Quick Installation

The MBX-3S requires only power, data and antenna connections, and can be fully installed and operational in just minutes.

## Hassle-Free Upgrading

The MBX-3S supports firmware upgrades as improvements to firmware or changes to the global beacon table are made. These upgrades are easily loaded into the receiver through the serial port using a PC computer.

## Data Interface

The MBX-3S data interface uses a standard serial port to ensure the widest possible compatibility range. The data port supports communication in either RS-232 or RS-422 protocols.

## Antenna

The MBX-3S receiver is fully compatible with all CSI Wireless antennas, including the E-field whip antenna, H-field loop antenna, and combination GPS/beacon antennas.

Electric field (or E-field) antennas require a ground connection to achieve optimal performance. For this reason, they are recommended for marine applications and static positioning.

Magnetic field (or H-field) antennas do not require a ground connection, and are therefore ideal for portable applications. They are also less susceptible to E-field noise, including precipitation static.

The AVL-1 vehicle antenna coupler enables the MBX-3S to receive differential corrections using an automotive AM/FM radio antenna. The AVL-1 provides signals to both your AM/FM radio and the MBX-3S without performance degradation.

## Operating Modes

In its default configuration, the MBX-3S receiver automatically tunes to track the strongest beacon station without user intervention. In manual tracking mode, the receiver tracks a user-specified beacon station. The front-panel interface permits the user to change between these operating modes simply and quickly.

## Hands-Free Operation

In automatic tuning mode, the MBX-3S uses two independent channels to cooperatively maintain lock on the best DGPS beacon signal available. While the primary channel decodes differential corrections, the secondary channel continuously scans the range of beacon frequencies to determine whether a stronger signal exists. If a superior signal is found, the primary channel tunes to track the new beacon station.

## Monitoring Software

CSI Wireless freely distributes DGPS Command Centre, a Windows-based software used to configure and monitor the operation of the MBX-3S receiver. This program is available for free public download from the CSI Wireless website: [www.csi-wireless.com](http://www.csi-wireless.com).

## Warranty

CSI Wireless is committed to our customers and to our products. We offer a limited one-year warranty on parts and labor.

Contact CSI Wireless today to discover how the MBX-3S can complete your differential positioning system.



# MBX-3

## Receiver Specifications

Channels: 2 independent channels  
 Channel Spacing: 500 Hz  
 Frequency Range: 283.5 to 325.0 Hz  
 MSK Bit Rates: 50, 100, 200 bps  
 Cold Start Time: <1 min  
 Warm Start Time: <2 seconds  
 Demodulation: Minimum shift keying  
 Sensitivity: 2.5 V/m for 10 dB SNR  
 Dynamic Range: 100 dB  
 Frequency Offset: ±5 Hz  
 Adjacent Channel Rejection: 60 dB  
 Correction Output Protocol: RTCM SC-104  
 Input Status Protocol: NMEA 0183

## Communications

Interface: RS-232C or RS-422  
 Baud Rates: 2400, 4800, 9600

## Environmental Specifications

Operating Temperature: -30°C to +70°C  
 Storage Temperature: -40°C to +80°C  
 Humidity: 95% non-condensing  
 EMC: EN 60945  
 EN 50081-1  
 EN 50082-1  
 FCC: Part 15, sub-part J,  
 class A digital device

## Power Specifications

Input Voltage Range: 9 to 40 VDC  
 Nominal Power: 2.5 W  
 Nominal Current: 210 mA  
 Antenna Voltage Output: 10 VDC (5VDC optional)

## Mechanical Specifications

Dimensions: 150mm L x 125mm W x 51mm H  
 (5.90L x 4.90W x 2.00H)  
 Weight: 0.64 kg (1.4 lb)  
 Display: 2-line x 16-character LCD  
 Keypad: 3-key switch membrane  
 Power Connector: 2-pin circular locking  
 Data Connector: DB9-S  
 Antenna Connector: BNC-S  
 Optional GPS Output Port: TNC-S

## Operating Modes

MBX-3 Mode (Default): LRTCM SC-104 correction and NMEA status message output (Default Mode)  
 MBX-E Mode: RTCM SC-104 correction and NMEA status message output and GPS NMEA message input for position and satellite status display

## NMEA 0183 I/O

- Y Receiver Automatic and Manual tune command
- Y Frequency and data rate query
- Y Receiver performance and operating status queries
- Y Automatic search almanac queries (proprietary)
- Y Baud rate selection command
- Y Receiver tune command
- Y Force cold start command (proprietary)
- Y Software upgrade command (proprietary)
- Y Configuration up-load command (proprietary)

## Accessories

Antenna: Various  
 Power Cables: Various  
 Antenna Cables: Various  
 Data Cables: Various  
 CSI Beacon Command Center: MS Windows 95<sup>™</sup> beacon control software

## Pin-out

RS, 232C (DB9 PIN #)

Pin 2 TXD, RTCM SC-104/Status Output  
 Pin 3 RXD, configuration Input  
 Pin 5 Signal return

RS-422 (DB9 PIN #)

Pin 1 TXD +, RTCM SC-104 / Status Output  
 Pin 2 TXD -, RTCM SC-104 / Status Output  
 Pin 4 RXD -, configuration input  
 Pin 5 Signal return  
 Pin 7 RXD +, configuration input

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 www.navtechgps.com

# csi wireless<sup>™</sup>

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#### **d. TRIMBLE DSM 232 SPECIFICATIONS**

### KEY FEATURES

Scalable product line - upgrade when it suits you

Simple connections, keypad and display delivers rapid system integration

Multiple correction sources - reduce down time with backup options

Built-in display and keyboard – no extra controller needed

Optional RS upgrade – Can be used as a DGPS reference station



### FLEXIBLE, MODULAR ROVER RECEIVER AND DGPS BASE STATION

The Trimble® DSM™ 232 DGPS receiver is an ideal solution for dynamic real-time marine positioning operations such as harbor dredging and for commercial positioning applications where it is integrated as the positioning sensor component. The modular GPS receiver with antenna options accepts GPS corrections from a variety of sources allowing the user the choice of sub-meter to centimeter performance.

The DSM 232 receiver is a high-quality solution for applications that require sub-meter, decimeter or centimeter positioning in demanding environments.

The DSM 232 receiver offers a wide range of GPS positioning methods and associated accuracies for offshore and onshore marine construction applications:

- Satellite Based Augmentation Systems (SBAS) such as WAAS, EGNOS and MSAS
- IALA compliant Navigation Beacon
- OmniSTAR VBS service<sup>1</sup>
- RTCM from a site based DGPS Reference Station
- OmniSTAR XP/HP<sup>1</sup>
- Real Time Kinematic (RTK) for maximum precision

This breakthrough GPS technology gives the operator the flexibility to purchase an upgradeable or non-upgradeable receiver. The non-upgradeable receiver can be purchased to accommodate current strict budget needs, or in cases of a more flexible budget, purchase the upgradeable receiver in anticipation of growth in the company's future projects.

The entry level DSM 232 includes a combined GPS / Beacon antenna capable of sub-meter performance using the free public IALA Beacon and SBAS corrections or subscription-based OmniSTAR VBS corrections. The beacon receiver provides superior weak-signal performance, allowing differential corrections to be received at long distances from the reference station and during challenging weather conditions.

With the addition of a dual frequency antenna and firmware upgrade the upgradeable DSM 232 models can use the OmniSTAR XP/HP satellite correction services. In this mode, performance is enhanced to decimeter accuracy

in vertical and horizontal position over a large geographic (land based) region. With OmniSTAR XP service, there is no degradation in position accuracy as generally associated with increasing distance from a fixed reference station.

The DSM 232 can be ordered with additional firmware to add premium RTK performance for high precision construction tasks. The DSM 232 can be used in an RTK rover mode through the use of an external radio link. Again, the upgradeable DSM 232 model can also be upgraded to include this RTK functionality.

The modularity of the DSM 232 system delivers installation flexibility via external GPS antenna options, as required on marine vessel installations, such as on top of a mast. The receiver can be mounted in a secure environment protected from the weather and theft, leaving only the antenna outside. In all cases the receivers EVEREST™ technology improves results in high multi-path environments such as those encountered on inland waterways and harbor construction sites.

### SUPERIOR INTEGRATION

The DSM 232 receiver is designed for easy integration into onboard systems. The built-in display and keyboard offers fast configuration and status information. The position, velocity, correction status and time is available from the data ports in NMEA 0183 or NMEA 2000®. The DSM 232 receiver outputs position reports data at rates up to 10 Hz. The 3 serial ports can also be used for setup, control, and data output using Trimble Standard Interface Protocol (TSIP) providing compatibility with previous DSM receiver model installations.

### DGPS REFERENCE STATION

In regions where the free-to-air correction services such as IALA Beacon or SBAS services are not available, the DSM 232 RS DGPS Reference Station can be used. In this case an external radio can be used to deliver the high quality RTCM SC-104 format corrections to rover units.

<sup>1</sup> OmniSTAR VBS/XP/HP services require a subscription from the service provider so check with them for availability and operating constraints in your area.

# TRIMBLE DSM 232 MODULAR GPS RECEIVER

## STANDARD SYSTEM FEATURES

- Modular receiver (separate antenna and receiver unit) for installation flexibility and security of investment
- Integrated display and keypad for system configuration and status checking without external software
- External GPS antenna choices for single frequency, dual frequency or DGPS base station operation
- IALA Beacon, Satellite Based Augmentation Systems (SBAS) such as WAAS, EGNOS compatible
- Accepts RTCM and CMR (optional) corrections from external radio link
- Upgradable to and available as 24-channel L1/L2 GPS receiver for improved accuracy performance, allowing for:
  - 3D decimeter accuracy OmniSTAR XP and HP service capable
  - 3D centimeter accuracy RTK capable
- Up to 10 Hz measurement update rate (NMEA and TSIP Protocols)
- Two physical connectors allow for 3 programmable RS-232 serial ports and 2 NMEA 2000® capable ports
- 1PPS signal
- Waterproof and dustproof
- -30 °C to +70 °C (-22 °F to +158 °F) operating temperature range
- 9V to 32V DC input power range with over-voltage protection
- Backward compatibility with DSM132 – same antenna cable, single frequency / beacon antenna, power and data cable, and mounting bolt pattern
- Suitable for permanent / semi-permanent as well as short term installations

## HARDWARE SPECIFICATIONS

### Physical

Size (WxHxD) . . . . . 14.8 cm (5.7 in) x 5.6 cm (2.2 in) x 21.6 cm (8.6 in)  
Receiver Weight . . . . . 0.96 kg (2.13 lb)  
Keyboard and display . . . LCD backlight display 16 characters by 2 rows,  
4 button keypad

Antenna Mounting . . . . . All accept 5/8" UNC male bolt

### Environmental

Operating temperature . . . . . -30 °C to +70 °C (-22 °F to +158 °F)  
Storage temperature . . . . . -34 °C to +85 °C (-29 °F to +185 °F)  
Humidity . . . . . Complies with MIL 810E. Unit sealed to +/- 5 PSID  
Water . . . . . Waterproof and dustproof

### Electrical

Power . . . . . 9 V to 32 V DC external power input  
with over-voltage protection  
Power consumption . . . . . Nominal 350 mA at 12 V DC  
Certification . . . . . Class B Part 15, 22, 24 FCC certification,  
CE mark approval, C-tick approval, WEEE

### Communications

- Two CONXALL connectors on the back plane, Port A and B
- 3 programmable RS232 outputs
- 2 CAN (NMEA 2000®) outputs

Receiver position update rate . . . . . 1,2,5,10 Hz  
Correction Data Input . . . CMR II, CMR+, RTCM 2.1, RTCM 2.3, RTCM 3.0  
Correction Data Output (with RS option installed) . . . . . RTCM 2.1,  
RTCM 2.3, RTCM 3.0  
RS232 Outputs . . . . . NMEA – GGA, GLL, GRS, GSA, GST, GSV, MSS, RMC,  
VTG, ZDA, various Proprietary NMEA TSIP format  
CAN Outputs . . . . . J1939, NMEA 2000®

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## ANTENNA SPECIFICATIONS

### DGPS Antenna

Size . . . . . 15.5 cm (6.1 in) D x 14.0 cm (5.5 in) H  
Weight . . . . . 0.55 Kg (1.2 lb)  
Operating Temperature . . . . . -30 °C to +70 °C  
Usage . . . . . L1 GPS, Beacon, SBAS and L-Band

### Dual Frequency Antenna

Size . . . . . 16 cm (6.25 in) D x 7.5 cm (3 in) H  
Weight . . . . . 0.55 Kg (1.2 lb)  
Operating Temperature . . . . . -30 °C to +70 °C  
Usage . . . . . L1/L2 GPS, SBAS and L-Band

### Geodetic Reference Station Antenna

Size . . . . . 34.3 cm (13.5 in) D x 7.6 cm (3 in) H  
Weight . . . . . 1.31 Kg (2.88 lb)  
Operating Temperature . . . . . -40 °C to +70 °C  
Usage . . . . . L1/L2 GPS and SBAS

Humidity/Case. . . All antennae are 100% condensing, units fully sealed.  
Dust-proof, waterproof, shock resistant

## OPTIONS

- Upgrade DGPS receiver to OmniSTAR XP/HP (includes dual frequency antenna)
- Upgrade OmniSTAR XP/HP receiver to RTK rover
- Upgrade for DGPS Reference Station

## PERFORMANCE SPECIFICATIONS

### Measurements

- Trimble EVEREST multi-path mitigation technology
- DGPS: 12 Channel L1 plus 2 channels for Beacon
- DGPS with SBAS (WAAS / EGNOS / MSAS): 11 GPS channels plus 1 for SBAS
- RTK or OmniSTAR VBS/XP/HP: 24 channel L1/L2 plus 1 channel L Band

### Code differential GPS positioning

Horizontal accuracy . . . . . ±(0.25 m + 1 ppm) RMS ±(0.8 ft + 1 ppm)  
Vertical accuracy . . . . . ±(0.50 m + 1 ppm) RMS ±(1.6 ft + 1 ppm)

### WAAS / EGNOS / MSAS<sup>1</sup>

Horizontal accuracy . . . . . Typically 1 m (3 ft)  
Vertical accuracy . . . . . Typically <5 m (<16 ft)

### OmniSTAR Positioning

VBS Service Accuracy . . . . . Horizontal typically better than 1 m (3 ft)  
XP Service Accuracy . . . . . Horizontal 20 cm (.7 ft), Vertical 30 cm (1 ft)  
HP Service Accuracy . . . . . Horizontal 10 cm (.3 ft), Vertical 20 cm (.7 ft)  
OmniSTAR XP/HP Convergence . . . Cold start - Typically 10 to 40 minutes  
depending on satellite geometry

### Real Time Kinematic (RTK) positioning<sup>2</sup>

Horizontal accuracy . . . . . ±(10 mm + 1 ppm), ±(.03 ft + 1 ppm)  
Vertical accuracy . . . . . ±(20 mm + 1 ppm), ±(.07 ft + 1 ppm)

### Initialization time

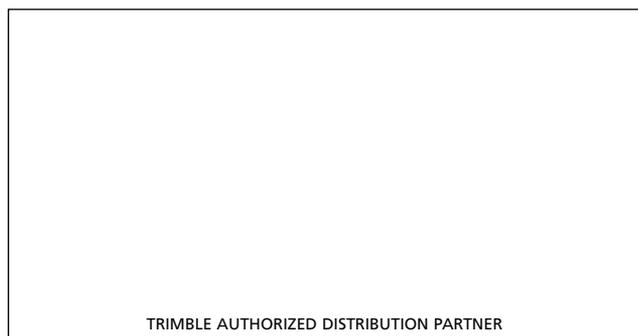
Regular RTK operation with base station . . Single/Multi-base minimum  
10 sec + 0.5 times baseline  
length in km, <30 km  
Initialization reliability<sup>3</sup> . . . . . Typically >99.9%

<sup>1</sup> Depends on WAAS / EGNOS / MSAS system performance

<sup>2</sup> Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry and atmospheric conditions. Always follow recommended practices.

<sup>3</sup> May be affected by atmospheric conditions, signal multipath and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

Specifications subject to change without notice.



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